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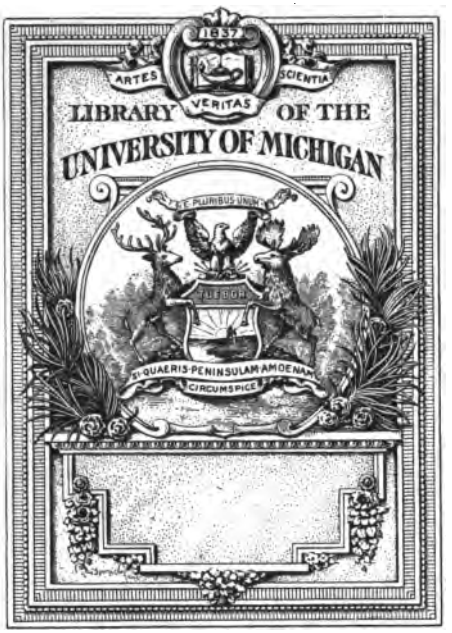

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TRANSACTIONS

OF THE

Wisconsin State Agricultural Society

Together With the Addresses and Papers Presented at the Annual Farmers' State Convention Held in the Rooms of the Society, in the Capitol at Madison, February, 1893.

VOL. XXXI.

COMPILED BY

JOHN M. TRUE, Secretary.

MADISON, WISCONSIN:
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1893.

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LETTER OF TRANSMITTAL.

To his Excellency, GEO. W. PECK,
Governor of the State of Wisconsin:

In accordance with legal requirements, I hereby transmit to you the various items of interest connected with the work of the Wisconsin State Agricultural Society for the past year.

This work, comprising the improvement of the newly acquired fair grounds, near the City of Milwaukee, and the holding of the first annual fair therein, is most important in the history of the society; and while performed under circumstances particularly trying and embarrassing, gained the unqualified commendation of the thousands of leading citizens of the state, visiting the State Fair.

We trust that good judgment and a kindly recognition of the great interests of agriculture, represented in our enterprise, may lead to a loyal and faithful support of our new enterprise, from the public-spirited people of the state.

Very truly yours,

JOHN M. TRUE,
Secretary.

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		Krull, Robt...	Milwaukee.
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Jeffrey, Geo.....	Milwaukee.	Lafeber, James ...	Wauwautosa.
Jenkins, J. G.....	Milwaukee.	Lamb, F. J	Madison.
Jenks, S. R.....		Landauer, Max....	Milwaukee.
Jenkins, J. C.....	Janesville.	Lando, Julius.....	Milwaukee.
Jerdee, L P.....		Lapham, Henry...	Summitt.
Jerdee. M. P.....		Larkin, B. F.....	Madison.
Johnson, John A...	Madison.	Larkin, C. D.. ...	Milwaukee.
Johnson, Jr., John	Madison.	Larkin, C. H.....	Milwaukee.
Johnson, Jos.....	Hartland.	Larkin, Daniel.....	Madison.
Johnson, M. B. ...		Lawrence, W. A...	Janesville.
Johnson, Fred J...	Milwaukee.	Lawrie, James....	Milwaukee.
Johnston, R A....	Milwaukee.	Lawton, J. G.....	De Pere.
Johnston, W. A....	Minneapolis.	Lazier, Ed.....	Rochelle, Ill.
Johnston, John....	Milwaukee.	Learned, J. M.....	
Johnstone, Mrs. F. L.	Madison.	Leidersdorf, B....	Milwaukee.
Johnson, C. H.....	Sun Prairie.	Leitch, Jr , W. T..	
Jones, E D	Fond du Lac.	Leitch, W. T.....	
Jones, John, N....	Madison.	Lennox, B. G.....	Chicago, Ill.
Jones, W. A.....	Mineral Point.	Leslie, John. ..	
Josslyn, E. S.....	Milwaukee.	Lester, Waterman.	
		Lewis, Calvin E...	Milwaukee.
Kane, A. L.....	Milwaukee.	Lewis, John L. .	Madison.
Keenan, Mathew..	Milwaukee.	Lindsay, E. J.....	Milwaukee.

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Little, Thos. H....	Janesville.	McNeil, David ...	Stoughton.
Lockwood, John..		McPherson, J. P..	Springdale.
Lucy, O. K.....	Columbus.		
Ludington, F.....	Milwaukee.	Meehan, James ...	Milwaukee.
Ludlow, A.....	Monroe.	Meehan, P.....	Milwaukee.
Luening, A. F....	Milwaukee.	Mehl, John	Milwaukee.
Lull, Charles R....	No. Greenfield.	Meinecke, Jr., A...	Milwaukee.
Lunzmann, C.....	Milwaukee.	Mienecke, Jno ...	Milwaukee.
Lyman, L. H.....	Madison.	Meisner, C. A.....	Milwaukee.
Lynch, T. M.....	Janesville.	Melindy, Miss M.	
Lysaght, Wm.....	Monroe.	A. M.....	Milwaukee.
		Mendel, H. M	Milwaukee.
Macomber, S. D...	New Lisbon.	Merrill, Alf.....	Madison.
Madden, Geo.....	Milwaukee.	Meyer, W. H.....	Milwaukee.
Mahoney, George..	Milwaukee.	Millard, A. F.....	Milwaukee.
Main, A. H.....	Madison.	Miller, B. K.....	Milwaukee.
Manegold, A. F...	Milwaukee.	Miller, John.....	Milwaukee.
Manegold, Jr., Chas	Milwaukee.	Miller, Chas. B....	Madison.
Mann, Andrew L..	Madison.	Miller, Roswell....	Chicago.
Mann, Curtis.....	Oconomowcc.	Miller, Fred.	Milwaukee.
Mann, Fred M.....	Milwaukee.	Miller, Jr., B. K..	Milwaukee.
Mann, Henry.....	Milwaukee.	Millett, Charles O.	Beloit.
Mann, J. E	Madison.	Mills, Simeon.....	Madison.
Mann, J. G.....	Milwaukee.	Miner, Cyrus.....	Janesville.
Mannwaring, Wm.	Black Earth.	Miner, G. B	Milwaukee.
Marshall, Samuel..	Milwaukee.	Mitchell, G.Stanley	Milwaukee.
Martin, A. C... ..	Ashton.	Mitchell, J. L	Milwaukee.
Martin, C. L.....	Janesville.	Mock, B.....	Milwaukee.
Martin, Nathaniel.		Mohr, Oscar.....	Milwaukee.
Martin, S. W.....		Mooney. R. D.....	Brown Deer.
Mason, G. A.....		Moore, B. F.	Fond du Lac.
Matthews, A. R...	Milwaukee.	Morden, Edward..	Milwaukee.
Matthews, E. P....	Milwaukee.	Mo ehouse, L. H..	Madison.
Maxon, Glenway..	Milwaukee.	Morgan, James....	Milwaukee.
Maxon, O. T.....	S.Evanston,Ill.	Morgan, Thomas..	Milwaukee.
May, A. C...	Los Angeles, Cal.	Morrison, W. H...	Madison.
		Moxley, A. R.....	
Mayhew, F. L.....	Milwaukee.	Mueller, Louis J ..	Milwaukee.
Mayhew, T. W.....	Milwaukee.	Mueller, Oscar....	Milwaukee.
McCarty, F. D.....	Glenn Harbor, Mich.	Mullen, James....	Milwaukee.
		Murray, Geo	
McConnell, L. J ...	Madison.	Myers, A. B.....	Milwaukee.
McConnell, Wm. N	Dartford.		
McCord, Sam'l....	Milwaukee.	Nash, C. D	Milwaukee.
McCormack, J G .	Madison.	Nason, S. L.....	Nasonville.
McDermott, Wm..	Fond du Lac.	Neacy, M.....	Milwaukee.
McDonald, A.....	Alloa.	Needham, J. P....	Wauwatosa.
McDonald, John ..	Minneapolis.	Nelson, Cassius B..	Madison.
McDowell, H. C...	Oconomowoc.	Newcomb, S. B ..	Cold Spring.
McFetridge, E. C..	Beaver Dam.	Newcome, C. W...	Milwaukee.
McGeoch, A. N....	Milwaukee.	Newton, I. S.....	Middleton.
McGeoch, P.....	Milwaukee.	Newton, T. L	Beaver Dam.
McKenna, Martin .	Madison.	Neuser, Henry...	Milwaukee.
McKerrow, Geo ...	Sussex.	Nichols, L. P	Berlin.
McKinney, H. D..	Janesville.	Nieman, L. W....	Milwaukee.
McLaren, W. P ..	Milwaukee.	Norris, C. W	Milwaukee.
McLaughlin, J. H.	Milwaukee.	Norton, J. B	Madison.

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Nowell, W. A....	Milwaukee.	Pierce, A. E.....	Milwaukee.
Noyes, A. F.....	Beaver Dam.	Pilgrim, D. T.....	Wauwatosa.
Nunnemacher, Rob	Milwaukee.	Pilgrim, Jr., D. T.	Wauwatosa.
Nunnemacher, R..	Milwaukee.	Pinney, S. U	Madison.
		Pleiss. August.....	Milwaukee.
Ober, R. P.....		Plumb, J. C.....	Milton.
Oberman, Geo. J..	Milwaukee.	Plumb, D. T.....	
Ogilvie, Robt. B..	Madison.	Plummer, B. G.. .	Wausau.
Olcott, J. B.....	Oshkosh.	Polzinsky, Jos....	
Olcott, John D....	Milwaukee.	Pond, Samuel A...	Janesville.
Oliver, Joseph B..	Milwaukee.	Poppert, Geo.....	Milwaukee.
Olney, C. W.....	LaCygne, Kan.	Porter, G. E.....	Eau Claire.
Ormond, Wm. M..		Porter, Wm. H...	Marinette.
Orr, George H....		Powers, D. J.....	
Osborne, W. H....	Milwaukee.	Powers, W. J.....	Black Earth.
Otjen, O. S.....	Milwaukee.	Pratt, E. E.....	
Ott, George V...	Lawtey, Fla.	Pratt, Oris.....	Spring Prairie.
		Pres.St. Peter's Val ley Farm Club...	
Pabst, Fred.....	Milwaukee.		
Pabst, Jr., Fred...	Milwaukee.	Preucer, C....	Milwaukee.
Pabst, Gustav.....	Milwaukee.	Prichard, Miss M.E.	Janesville.
Palmer, E. W.....	Fitchburg.	Quinn, Jeremiah...	Milwaukee.
Palmer, Henry....	Verona.		
Palmer, H. L.....	Milwaukee.	Rademacher, Wm..	Milwaukee.
Palmer, J. S... ..	Baraboo.	Rawson, C. A.....	
Palmer, O. M....	Oregon.	Ray, Charles.....	Milwaukee.
Palmer, J. Y.....		Raymond, S. O ..	Geneva.
Park, W. J.....	Madison.	Reed, Harrison....	Madison.
Parker, C. H.....	Beloit.	Resague, A. C.....	Janesville.
Parkinson, A. C..	Columbus.	Rexford, J. D.....	Janesville.
Parmley, Ira.....	Center.	Reynolds, John...	Ranney.
Parsons, P. B....		Reynolds, Thomas..	Madison.
Partridge, Jno. S..	Whitewater.	Rice, E. M.....	Whitewater.
Patten, L. F.....	Janesville.	Rich, A. W.....	Milwaukee.
Patton, Jas. E....	Milwaukee.	Richards, Griffith..	Cambria.
Paul, Edward J....	Milwaukee.	Richardson, D. ...	Middleton.
Paul, John, H.....	Genessee.	Richardson, H.....	Janesville.
Paulson, Aug. A...	New Holstein.	Richardson, James.	
Payne, H. C.....	Milwaukee.	Richardson, R. J...	Janesville.
Payne, Wm.....	Janesville.	Richmond, A.....	Whitewater.
Peck, Geo. W.....	Madison.	Richter, Frederick	Milwaukee.
Peffer, G. P.....	Pewaukee.	Riebsam. C. R.....	Madison.
Peffer, Miss Kate F.	Pewaukee.	Rilling, Geo. F....	North Greenf'ld
Pember, R. T.....	Janesville.	Riordan, Chas.....	
Pereles, Jas. M....	Milwaukee.	Robbins J.....	
Pereles, Thos. J....	Milwaukee.	Robbins, J. V.....	
Perrine, L. W.....		Robinson, Geo. I...	Milwaukee.
Perry, B. F.....	Madison.	Robinson, Chas. C..	Milwaukee.
Petley, James.....	Milwaukee.	Roe, J. P.....	
Pettit, C. H.....	Milwaukee.	Rogers, C. C.....	Milwaukee.
Pettit, L. J.....	Milwaukee.	Rogers, C. H	Milwaukee.
Pfister, Chas	Milwaukee.	Rogers, D. G.....	Milwaukee.
Phillips, A. J	West Salem.	Rogers, H. G.....	Milwaukee.
Phillips, J. P.....		Rogers, J. S.....	Burlington.
Phillips, Thomas...	Milwaukee.	Rogers, Lawrence..	
Pier, C. K.....	Milwaukee.	Rohlfing, Wm. ...	Milwaukee.
Pierce, C. L.....	Milwaukee.	Rosenkranz, O. L..	Milwaukee.

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Rowe, W. E.....	Mazomanie.	Smith, J. Morris...	
Rucker, A. M.....	Milwaukee.	Smith, M. C.....	Janesville
Ruggles, J. D.....		Smith, S. B. ...	Vernon.
Rusk, Jeremiah M.	Viroqua.	Smith, Winfield...	Milwaukee.
Rust, Julius.....	N. Greenfield.	Snell, H.....	Madison.
Rust, Newman F...	N. Greenfield.	Snyder, E. A.....	West Granville
Rust, John L.....	N. Greenfield.	Snyder, Fred.....	Milwaukee.
Ryder, James K...	Waterloo.	Solper, Chas.....	Milwaukee.
		Somers, Peter J....	Milwaukee.
Salisbury, Abraham	Milwaukee.	Spaulding, D. J....	Black Riv. F'lls
Salisbury, D. F.....	Oregon.	Spencer, J. C.....	Milwaukee.
Salisbury, R. W...	Paoli.	Spencer, John C...	Milwaukee.
Sanborn, Jas. S....	Milwaukee.	Spencer, R. C.....	Milwaukee.
Sanderson, H. B...	Milwaukee.	Sprecher, John....	Madison.
Sanderson, R. B...		Squire, Thomas B..	Waterloo.
Sanger, Casper M .	Waukesha.	St. John, J. W....	Janesville.
Sarles, John H....	Boscobel.	Stadler, J. C.....	Milwaukee.
Saveland, John....	Milwaukee.	Stafford, H. H.....	Milwaukee.
Sawyer, H. W.....	Hartford.	Stanley, Wm... ..	Vienna.
Sawyer, James....	Milwaukee.	Stannard, A. C....	Milton.
Schley, Bradley G.	Milwaukee.	Stapleton, J. A....	Milwaukee.
Schultz, H. F.	N. Greenfield.	Stark, Chas. G.....	Milwaukee.
Schœffel, Geo. J...	New York.	Stark, Edward J...	Milwaukee.
Schutter, Chas.....		Starke, Conrad....	Milwaukee.
Schweitzer, Theo.	Milwaukee.	Steele, Chester.....	Milwaukee.
Seamans, S. H.....	Milwaukee.	Steensland, H.....	Madison.
Seaver, J. E.....	Darien.	Stelloh, Henry. ...	Root Creek.
Seiben, John.....	Milwaukee.	Stephenson, F. M..	Marinette,
Seville, Jas...	Lodi.	Stephenson, Isaac..	Marinette.
Sext n, Wm. F....	Milwaukee.	Stevens, J. F.....	Madison.
Sharp, J. W... ...		Stewart, C. R	Carson, Minn.
Shaw, Charles H..	Milwaukee.	Stewart, G. H... .	Colorado Springs, Colo.
Shaw, Geo. B.....	Eau Claire.		
Shaw, J. B		Stickney, Chas....	Wauwatosa.
Shea, Edward	Milwaukee.	Stickney, J. S.....	Wauwatosa.
Shea, Thomas.....	Milwaukee.	Stilson, Adelbert...	Oshkosh.
Sheldon, A. H.....	Janesville.	Stilson, Edgar.....	Oshkosh.
Sheldon, D. G	Madison.	Stockman, Jno....	Milton.
Sheldon, S. L.....	Madison.	Stoltz, H. L.....	646 Island Ave. Milwaukee.
Sheperd, Clarence.	Milwaukee.		
Sherman, Adelmar	Janesville.	Stone, G.....	Beloit.
Sherman, Amaziah	Janesville.	Storm, Wm.....	Madison.
Sherman, H. B....	Burnett Junct.	Stowe, La Fayette.	Sun Prairie.
Shipman, S. V.....	Chicago, Ill.	Street, Richard....	Waukesha.
Sholes, Chas... ...	Milwaukee.	Sutherland, C	Madison.
Simmons, C. J.....	Monroe.	Sutton, J. J	Columbus.
Simonds, Wm. L .	Milwaukee.	Swain, W. W.....	Madison.
Simpson, E. D.....	Milwaukee.	Swan, E. A	Wauwatosa.
Skelley, Chas.....	Janesville.	Swan, N. J.....	Wauwatosa.
Skinner, E. W	Sioux City, Ia.	Swan, O. J.....	Wauwatosa.
Skinner, Geo. J....	Sioux Falls, S.D		
Sloan, I. C...	Madison.		
Smith, A. A. L....	Milwaukee.	Tallman, W. H....	Janesville.
Smith, A. E.....	Milwaukee.	Tay or, E. T.....	Mukwonago.
Smith, Angus	Milwaukee.	Taylor, H. A	Madison.
Smith, E. C.....	Markesan.	Taylor, Wm. R....	Cottage Grove.

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Tenney, D. K.....	Chicago, Ill.	Wackerhagen, E...	Racine.
Tenney, H. A	Madison.	Waggstaff, S. M...	
Tenney, Samuel A.	Hartland.	Wagner, Julius....	Milwaukee.
Terwilliger, Jas....	Madison.	Wait, J. B.....	
Terwilliger, Sid ...	Madison.	Wall, E. C...	Milwaukee.
Thayer, M. A... ..	Sparta.	Walker, W. A.....	Milwaukee.
Theurer, Fred... .	Milwaukee.	Walsh, Michael ...	Milwaukee.
Thom, H. C	Madison.	Warren, Fred C...	Fox Lake.
Thomas, Amos....	Good Hope.	Warren, J. H	Janesville.
Thomas, E. P.....	Milwaukee.	Webster, S. R.....	Danville.
Thomas, W. H....	Pewaukee.	Weigler, August...	Milwaukee.
Thompson, H. M..	Mosinee.	Weisel, Peter	Milwaukee.
Thorp, J. G.....	Eau Claire.	Weiner, Jacob.....	Milwaukee.
Thorson, John.....	Milwaukee.	Welch, William...	Madison.
Tibbits, Geo. M....	Milwaukee.	Wellauer, Jacob...	Milwaukee.
Tierney, Kyron....		Werner, John	
Todd, J. G.....	Janesville.	West, Henry.....	Madison.
Tolford, J. W... ..	Neillsville.	West, Henry H....	Milwaukee.
Torgerson, Lars...		West, S. C	Milwaukee.
Torry, R. D... ...		Weston, John.....	Burnett.
Townley, John ...	Moundville.	Whaling, J. M....	Milwaukee.
Tratt, F. W.....	Whitewater.	Wharton, J. S....	Milwaukee.
Treat, Geo. E.....	Milwaukee.	Wheeler, George F	Milwaukee.
Treat, R. B.....		Wheeler, Guy.....	Janesville.
True, John M... ..	Baraboo.	Wheeler, J. M... .	Wauwatosa.
Tucker, Joseph J..	Chicago, Ill.	Wheeler, L. A .	Milwaukee.
Tuttle, A. G.....	Baraboo.	Wheelock, W. G..	Janesville.
Tweedy, Jr., J. H..	Milwaukee.	Wheelwright, Jesse	Middleton.
Twining, M. S.....	Monroe.	Whitcombe, H. F..	Milwaukee.
		Whitney, W. F ..	Milwaukee.
		Wicks, Thomas ...	
Uihlein, Alfred....	Milwaukee.	Wightman, H	
Uihlein, August...	Milwaukee.	Wilcox, C. F	Janesville.
Uihlein, Henry....	Milwaukee.	Wilcox, C. G.....	De Pere.
Usher, Ellis	Milwaukee.	Wilkin, T. S	Milwaukee.
		Wilkins. A. W....	Milwaukee.
		Wiley, O. S.....	Benton Har., Mich.
Van Brunt, W. A..	Horicon.		
Vance, David.....	Milwaukee.	Williams, C. H....	Baraboo.
Vance, Frank L...	Milwaukee.	Williams, D	Darien.
Van Cott, Albert B	Madison.	Williams, Daniel..	Summit.
Van Etta, Jacob...	Madison.	Williams, J. P ...	Madison.
Van Kirk, N.....	Chicago, Ill.	Williams, Randall.	Janesville.
Van Norman, G. B.	Milwaukee.	Williams, S. B ...	Madison.
Van Orden, J....	Baraboo.	Wilson, Zebina ..	Palmyra.
Van Schaick, I. W..	Milwaukee.	Wilson, William..	Wausau.
Van Slyke, N. B...	Madison.	Wilson, William...	
Vaughn, A. W....	Lodi.	Wolcott, H	Milwaukee.
Vernon, Ralph C..	Madison.	Wolf, W. H.....	Milwaukee.
Viall, Andrus	Madison.	Wood, J. W	Baraboo.
Vilas, Chas. H.....	Chicago, Ill.	Wootton, Robert..	Madison.
Vilas, Wm. F.....	Madison.	Worthington, B. M	
Vilter, Ernst.....	Milwaukee.	Wright, D. H.....	Madison.
Vogel, Fred.....	Milwaukee.	Wright, Geo.....	Mt. Horeb.

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Wright, J. S.....	Emerald Grove	Youmans, C. A...	Neillsville.
Wright, Josiah T..	Janesville.		
Wright, O. W.....		Zimmerman, G. J..	Milwaukee.
Wurster, Jacob....	Milwaukee.	Zimmerman, V....	Milwaukee.
Wylie, Geo.....	Leeds.	Zinn, A. C.....	Milwaukee.
Wylie, Geo.....	Elkhorn.	Zwietusch, Otto...	Milwaukee.
Yewdale, Merton H	Milwaukee.		

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Abbott, Chauncy,
Adams, Isaac,
Allen, H. M.,
Allen, W. C.
Allis. E. P.,
Arnold, J. M.,
Atwood, Chas. D.,
Atwood, David,
Ayers, J. W.,
Bacon, I. P.,
Bailey, M. T.,
Baker, R. H.,
Barnes, Geo.,
Barron, H. D.,
Barry, James,
Baxter, Geo.,
Bayley, F. W.,
Beecroft, W. G.,
Bemis, Fred,
Benedict. S. G.,
Benjamin, H. M.,
Bennett, A. A.,
Billings. H. M.,
Blair, Francis J.,
Blanchar, W.,
Blossom, Levi,
Boomer, E. J.,
Bostwick, Perry,
Bowen, J. B.,
Bowman. J. M.,
Bradley. C. T.,
Braley, A. B.,
Briard, W. A.,
Briggs, F.,
Brodhead, E. H.,
Brown, B. F.,
Brown, T.,
Brown, J. J.,
Burnham, Geo.,
Burnham, John L.,
Bush, Samuel,
Busjaeger, A.,
Button, Henry H.,
Campbell, C. M.,
Carpenter, J. A.,
Carter, Guy,
Cary, I.,
Casar, Wm.,
Case, J. I.,
Chandler, Sam,
Chapman, T. A.,
Chase, H.,
Child, John,
Clark, C. R.,
Clark, Satterlee,
Coit, D. R.,
Coleman, W. W.,
Corey, J.,
Cottrill, J. P. C.,
Craig, A. J.,
Crocker, Hans,
Cross, J. B.,
Curtis, L. S.,
Curtis, Seymour,
Daggett, M. L.,
Daggett, S. S.,
Dahlman, John,
Davis, G. L.,
Davis, Jno.,
Davis, S. B.,
Dean, John S.,
Dean, N. W.,
Dewey, Nelson,
Dickson, J. P.,
Dodge, J. E.,
Doris, John,
Dorn, M. M.,
Doty, E. P.,
Dousman, H. L.,
Dousman, J. B.,
Drury, E. W.,
Dunn, Andrew,
Dunn, Wm.,
Dunning, Abel,
Durkee, Chas.,
Durkee, H.,
Eaton, J. O.,
Elson, Chas.,
Ellsworth, O.,
Emmons, N. J.,
Enos, E.,
Fairbanks, E.,
Fernley, John,
Field, Martin,
Fifield, L.,
Fitch, W. G.,
Foote, Sidney,
Fowle, Jacob,
Fox, W. H.,
Friend, Elias,
Froedert, Fred,
Furlong, John,
Furlong, Thos. T.,
Grady, F. M.,
Gernon, Geo.,
Gillett, R. E.,
Goodrich, G.,
Grant, Albert,
Grant, S. B.,
Green, Anthony,
Green, Geo. G.,
Greenman, H. D.,
Green, Samuel,
Gregory, J. C.,
Grover, E.,
Guernsey, Orrin,
Hall, S. H.,
Hanchett, A. M.,
Hancock, B.,
Hanford, A. G.,
Hanstran, Peter,
Harrington, N. M.,
Harvey, L. P.,
Helfenstein, J. A.,
Hibbard, W. B.,
Hill, P. B.,
Hiner, W. H.,
Hobart, L. J.,
Hodge, Robert,
Hoeflinger, Carl,
Holbrook, James,
Holt, David,
Hopkins, B. F.,
Hopkins, J. C.,
Hughes, Wheldon,
Hunt, J. W.,
Huntington, C. P.,
Hutson, Sol.,
Jacobs, H. C.,
Janssen, E. H.,
Johnston, Hugh L.,
Johnson, J. C.,
Juneau, Paul,
Kellogg, L. H.,
Kellogg, L. T.,
Kendrick, C. D.,
Kent, A. C.,
Kellogg, Rufus B.,
Kershaw, W. J.,
Kimbal, John,
Kingsley, S. P.,
Klauber, Samuel,
Kneeland, Moses,
Lapham, I. A.,
Larkin, W.,
Lewis, H. A.,
Luddington, H.,
Luddington. Jas. L.,
Lynde, W. P.,
Mabie, E. T.,
Macy, J. B.,
Masters, E. D.,
Matteson, Clinton,
Matts, J. H. B.,
McBride, Alex,
McCullough, And'w
McDill, A. L.,
McDougal, G. W.,

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McKenna, David,
Mears, W. A.,
Merrill, S. S.,
Miltimore, Ira,
Mitchell, Alex.,
Mix, E. T.,
Morse, D. S.,
Morse, Sam'l,
Moseley, G. F.,
Mosher, J. C.,
Nazro, John,
Newton, Ephraim,
Nott, B. F.,
Paddock, Geo.,
Paine, Geo.,
Page, H. L.,
Page, H. M.,
Park, John W.,
Perkins, P. M.,
Perry, Eli,
Pfister, Guido,
Phelps, Warren A.,
Pinckney, B.,
Plankington, John,
Porter, W. F.,
Post, D. T.,
Power, D. G.,
Prichard, P. M.,
Proudfit, Andrew,
Reed, Herbert,
Reynolds, John,
Reynolds, Mich.,
Reyser, J. O.,
Richards, Richard,
Roddis, T. R.,
Rodermund, John,
Rogers, Anson,
Ross, W.,
Rowley, N. C.,
Ruble, Simeon,
Russell, Harvey,
Sage, E. C.,
Sanderson, Ed.,
Sanderson, Wm.,
Schandien, Emil,
Schutt, U.,
Scollan, Frank,
Scott, S. B.,
Seiben, John,
Sexton, Kellogg,
Sexton, L.,
Sherman, Geo.,
Sherman, J. M.,
Sherwood, J. C.,
Shipman, A. C.,
Sinclair, Jeff,
Slaughter, A. B.,
Slaughter, G. H.,
Slocum, G. A.,
Smith, Adam,
Smith, Geo. B.,
Smith, H. L.,
Smith, J. B.,
Smith, S. W.,
Smith, W. E.,
Spaulding, Jos.,
Spaulding, Wm.,
Stannard, A. C.,
Stevens, G. C.,
Stilson, Eli,
Strong, H. P.,
Sullivan, James,
Talmadge, John J.,
Terry, F. H.,
Thomas, M. J.,
Thompson, Dr. W.,
Thompson, J. H.,
Thompson, Ole,
Throop, B.,
True, W. H.,
Utter, Joseph,
Van Nostrand, A. H.,
Vilas, Henry,
Vilas, L. B.,
Vilas, L. M.,
Walrab, Sylvan,
Warren, W. R.,
Webb, James A.,
Webster, James,
Webster, Martin,
Weed, Chas.,
Wells, D. L.,
West, A. H.,
Wheeler, W. A.,
White, A.,
White, C. W.,
White, W. A.,
Whittelsey, T. T.,
Willard, J. F.,
Williams, C. L.,
Williams, Daniel,
Williams, G. M.,
Williams, S. G.,
Wilson, H. O.
Wolcott, E. B.,
Woolley, J. T.,
Worthington, D.,
Worthington, Geo.,
Wright, N. A.,
Young, J. E.

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OFFICERS OF AGRICULTURAL AND INDUSTRIAL SOCIETIES.

Name of Society.	President.	Secretary.	Post Office of Secretary.	Treasurer.
Adams County Agricultural Society	W. E. McGowan	J. W. Gunning	Friendship	G. W. Waterman
Arcadia Agricultural and Driving Association	Nic Lehrbach	George Mathys	Arcadia	A. F. Hensel
Baraboo Valley Agricultural Society	James Lake	A. F. Lawton	Reedsburg	A. P. Ellinwood
Barron County Agricultural Society	W. W. Flinn	Jos. E. Cartwright	Chetek	Wm. Kent
Boscobel Agricultural and Driving Part Association	Lon B. Ruka	J. P. Walker	Boscobel	Will H. Pitman
Brown County Agricultural and Mechanical Associati'n.	R. J. McGeehan	J. S. Chase	DePere	John Cook
Brown County Fair and Park Association	H. Hagemeister	D. W. Flatley	Green Bay	H. B. Baker
Buffalo County Agricultural Society	S. D. Hubbard	Alex Lees	Gilmantown	Jas. T. Brownlee
Burnett County Agricultural Society	Peter Anderson	Andrew A. Anderson	Grantsburg	Simon Thoresen
Blakes Prairie Agricultural Society	J. A. Davis	W. E. Lewis	Patch Grove	H. C. Enke
Calumet County Agricultural Society	Tyark Oesau	L. D. Dorschel	Chilton	Winfield Lloyd
Central Wisconsin Agricultural, Mechanical and Scientific Association	E. D. Brown	A. W. Sanborn	Stevens Point	Emmons Burr
Clark County Agricultural Society	C. A. Youmans	S. M. Marsh	Neillsville	Alonzo Brooks
Columbia County Agricultural Society	Geo. Bain	J. E McDonald	Portage	R. Scott
Crawford County Agricultural Society	Robt. Morris	Fergus Mills	Seneca	Jas. Fisher, Jr.
Cumberland Agricultural and Driving Park Associati'n.	J. F Miller	H. S. Comstck	Cumberland	S. W. Hines
Dane County Agricultural Society	S. L. Sheldon	Ralph Vernon	Madison	Daniel Becktel
Dodge County Fair Association	John W. Ganes	Wm. B. Shepard	Beaver Dam	D. B. Holt
Door County Agricultural Society	H. C. Sibree	C. M. Whiteside	Sturgeon Bay	C. L. Nelson
Dunn County Agricultural Society	J. F. Golden	O. W. Massee	Louisville	J. B. Chickering
Eastern Monroe County Agricultural Society	O. M. Hill	M. L. Hineman	Tomah	I. Vandevoort
Grant County Agricultural Society	Delos Abrams	R. Meyer, Jr.	Lancaster	W. J. McCoy
Green County Agricultural Society	G. T Hodges	R. A. Etter	Monroe	A. Lewis
Iowa County Agricultural Society	Louis Laun	Jno. M. Ruse	Dodgeville	F. W. Stratman, Sr.
Industrial Association of Manitowoc County	Cornelius Madson	Robt. H. Markham	Manitowoc	Oscar A. Alter
Jackson County Agricultural Society	H. A. Bright	G. M. Hull	Black River Falls	James Livingston
Jefferson County and Rock River Valley Agricultural Society	D. G. Cralg	S. N. D. Smith	Jefferson	G. J. Kispert
Juneau County Agricultural Society	S. C. Plummer	H. H. Heatu	Munston	Fred A. Adler
Kewaunee County Agricultural Society	R. A Moore	Adolph Ebel	Kewaunee	John Streu, Jr.
La Crosse County Agricultural Society	J. J. Johnson	S. W. WBrown	West Salem	F. H. A. Nye
La Crosse Interstate Fair Association	B. E. Edwards	Geo. W. Taylor	La Crosse	H. P. Magill
La Fayette County Agricultural Society	David Schrieter	Wm. Hooper	Darlington	James H. Keefe
Lake Superior Agricultural, Industrial and Fine Art Society	T. G. Alvord	Charles White	West Superior	F. A. Woodward

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Langlade County Agricultural Society	J. M. Bemis	Geo. W. Hill	Antigo	Chas. S. Leykom
Little Baraboo Valley Fair Association	Samuel Anderson	Chas. Pearson, Jr	Ironton	Harry Thornton
Lodi Union Agricultural Society	S. D. Steele	E. W. Gardner	Lodi	J. B. Dwinnell
Marathon County Agricultural Society	Robert Plisch	E. B. Thayer	Wausau	John Kiefer
Marquette County Agricultural Society	John Hamilton	W. H. Moss	Westfield	H. R. Rawson
Monroe County Agricultural Society	J. L. Woy	C. E. Lake	Sparta	E. W. Robie
Northwestern Agricultural and Mechanical Society	E. C. Clark	R. E. Rust	Eau Claire	Geo. W. Robertson
Ontagamie County Agricultural Society	John Dey	H. D. Hardacker	Hortonville	Mathew McComb
Ozankee County Agricultural Society	A. R. Boerner	D. E. McGinley	Saukville	Louis Schroeder
Pepin County Agricultural Society	P. J. Ryan	W. H. Hunting	Durand	J. J. Morgan
Pierce County Central Fair	B. Elliott	J. L Moody	Ellsworth	J. F. Bowers
Polk County Agricultural Society	W. H. McCourt	S. W. Blanding	St. Croix Falls	John Comer
Portage County Agricultural Society	A. Gasman	John Harkness	Amherst	P. N. Peterson
Price County Agricultural Society	F. W. Sackett	E. W. Murray	Phillips	Geo. Osterman
Richland County Agricultural Society	J. L. R. McCollum	F. W. Burnham	Richland Centre	T. M. Hart
Rock County Agricultural Society	J. E. Gleason	E. B. Heimstreet	Janesville	S. L. James
St. Croix County Agricultural Society	A. D. Richardson	Allan Beggs	Hudson	L. Crandall
Sauk County Agricultural Society	J. M. True	J. S. Hall	North Freedom	H. Marriott
Seymour Fair and Driving Park Association	James Dean	Lloyd Tubbs	Seymour	Wm. Michelstetter
Shawano County Agricultural Society	F. W. Humphrey	D. A. McDonald	Shawano	F. D. Sator
Sheboygan Exposition and Driving Park Co.	T. M. Blackstock	A. L. Swart	Sheboygan	H. Scheele
Southwestern Wisconsin Industrial Association	Geo. G. Cox	Henry S. Weil	Mineral Point	Phil Allen, Jr.
Taylor County Agricultural Society	H. J. Thompson	G. W. L. Shattuck	Medford	T. M. Miller
Trempealeau County Agricultural Society	A. A. Arnold	F. G. Davis	Galesville	W. B. Thompson
Trempealeau County Agricultural, Industrial and Driving Park Association	F. A. George	H. H. Scott	Whitehall	E. N. Trowbridge
Vernon County Agricultural Society	Elizah Tilton	Charles J. Smith	Viroqua	W. W. Powell
Walworth County Agricultural Society	E Davidson	Samuel Mitchell	Elkhorn	L. G. Latham
Waushara County Agricultural Society	J. S. Bugh	J. T. Ellarson	Wautoma	Geo. P. Walker
Washington County Agricultural Society	W. P Rix	Joseph Ott	West Bend	Geo. W. Jones
Waukesha County Agricultural Society	E. W. Chafin	Warren H. Smith	Waukesha	Frank R. Fuller
Waupaca County Agricultural Society	F. Schonick	A. L. Hutchinson	Weyauwega	A. V. Balch
Wisconsin Central Stock Growers, and Industrial Association	S. B. Stanchfield	H. C. Moore	Fond du Lac	C. W. Henry
Wood County Agricultural and Mechanical Associati'n	L. M. Nash	I. H. Taylor	Grand Rapids	F. J Wood

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LAWS RELATING TO THE SOCIETY.

The Wisconsin State Agricultural Society was organized March 8, 1851, and incorporated by

CHAPTER 5, LAWS OF 1853.

SECTION 1. The Wisconsin State Agricultural Society is hereby declared a body politic and corporate, and by that name it shall be known in all courts and places whatsoever.

SECTION 2. The objects of the society being to promote and improve the condition of agriculture, horticulture and the mechanical, manufacturing and household arts, it shall be allowed for these purposes only, to take, hold and convey real and personal estate; the former not exceeding ten thousand dollars.

SECTION 3. The said corporation shall possess all the powers and privileges conferred, and be subject to all the liabilities imposed upon corporations by the revised statutes of this state, so far as the same may be applicable.

SECTION 4. For the purpose of organizing said society under this charter and for the transaction of such other business as may come before it, the executive committee of the society may call a meeting of the same at such time and place as they may deem proper; first giving due notice thereof.

CHAPTER 40, LAWS OF 1854.

SECTION 2. It shall be the duty of the executive committee of said Wisconsin State Agricultural Society, to keep an accurate account of the manner of expenditure of said sum of money hereby appropriated, and transmit the same, together with the vouchers therefor, to the governor of the state, in the month of January in each year, to be by him laid before the legislature.

SECTION 3. It shall be the duty of said executive committee of the Wisconsin State Agricultural Society to collect, arrange and collate all information in their power, in relation to the nature, origin and preparation of soils; the cultivation and growth of crops; the breeding and management of stock; the application and character of manures and fertilizers; the introduction of new cereals and other grains; and other agricultural sub-

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jects, and report the same, together with a statement of their own proceedings, to the governor of this state, in the month of January, in each year, to be by him laid before the legislature.

CHAPTER 53, LAWS 1858.

SECTION 3. The principal officers of the Wisconsin State Agricultural Society shall have full jurisdiction and control of the grounds on which the society may exhibit, and of all the streets and alleys and other grounds adjacent to the same, during all such exhibitions, so far as may be necessary to preserve and keep good order, and so far as may be necessary to exclude therefrom all other exhibitions, booths, stands or other temporary places for the retail or sale of any kind of spirituous or fermented liquors or other article or articles that they might deem objectionable or offensive to said exhibition. The president of the society or in his absence, any vice-president acting in his stead, shall have the power to appoint any necessary policemen to assist in preserving the peace, quelling any disturbance or arresting offenders and conveying them to jail for trial, and all such policemen thus appointed shall be vested during the continuance of such exhibition with the ordinary powers and authority of common constables, and be entitled to similar fees for any services rendered or duty performed. Any person or persons who shall wilfully and without leave enter any fair grounds during an exhibition, that are duly enclosed with a proper fence, not less than six feet high, either by climbing over, or under, or through said fence, or by fraudulently receiving and using the tickets or badge of another, or passing the gate-keeper without the proper payment and compliance with the rules of said grounds, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court, shall be liable to a fine of not less than five nor more than twenty-five dollars; and in case of non-payment, to imprisonment in the county jail not less than one nor more than ten days. Any such offender may be tried before any justice of the peace, or police justice most convenient to be found.

JOINT RESOLUTION NO. 7, SESSION LAWS OF 1866.

Resolved by the assembly, the senate concurring, That the rooms on the north side of the west wing of the capitol, to-wit: The rooms just made vacant by the removal of the attorney general and the superintendent of public instruction, be prepared by the superintendent of public property, for the use of the Wisconsin State Agricultural Society, and that the said society be and hereby is allowed the use of the same until otherwise ordered by the legislature.

CHAPTER 95, LAWS OF 1870.

SECTION 1. Joint stock associations formed under the laws of this state for the encouragement of industry by agricultural and industrial fairs and

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exhibitions, may purchase and hold such real and personal property as shall be necessary for fair grounds, and such property while used exclusive for such fairs and exhibitions, shall be free from taxes, Provided, that the quantity of land so exempt shall not exceed forty acres.

CHAPTER 159, LAWS OF 1875.

SECTION 2. The superintendent of public property is hereby authorized to furnish the office of the Wisconsin State Agricultural Society with stationery upon the order of the secretary of said society, the same as other officers in the capitol are supplied.

CHAPTER 65, LAWS OF 1877.

SECTION 1, provides: That nothing in this act shall be construed to prevent any citizen of any other state from becoming a member or officer of any agricultural society or industrial association which is now organized or may hereafter be organized under or by virtue of any law of this state.

CHAPTER 215, LAWS OF 1877.

AN ACT to donate the cereals and other centennial exhibits made by the state, to the State Agricultural Society.

SECTION 1. The cereals and other seeds and glass globes in which said cereals and seeds were exhibited by the state at the centennial exposition; one agricultural map of the state; one case samples fine wool; one picture of the state capitol, and three pictures of centennial buildings, are hereby donated to the above named society, to be by them kept in the agricultural rooms in the capitol.

CHAPTER 199, LAWS OF 1880.

SECTION 1. The Secretary of the Sta'e Agricultural Society is hereby authorized to procure for the use of his office the necessary amount of postage stamps or stamped envelopes for the payment of the postage of the official correspondence of his department. The account therefor shall be audited by the secretary of state upon the presentation thereof in the manner hereinbefore provided, and paid out of the state treasury.

CHAPTER 194, LAWS OF 1885.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society the sum of four thousand dollars. *Provided*, that no warrant shall be drawn by the secretary of state for the payment of the sum of money hereby appropriated, except upon the presentation of a sworn statement, signed by the president and secretary of the said Wisconsin State Agricultural Society, certifying that the sale of intoxicat-

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ing liquors has been prohibited and prevented upon the fair grounds of said Society during the year for which the appropriation is made.

SECTION 2. It shall be the duty of the several agricultural societies entitled to the state aid of one hundred dollars in this state, to send their president or other representative to the state fair, where the annual election of officers is held, there to act on committee of award, and to cast the vote for the county in the aforesaid election.

SECTION 3. On arrival of the president or other representative at the state fair he shall report to the secretary thereof, and on the certificate of the secretary of his attendance and performance of the duties named in section 2 of this act, the treasurer shall pay to him two dollars per day for the time he has been in attendance, not exceeding five days, and six cents per mile, one way, over the nearest traveled route from his home to the place where the state fair is held.

SECTION 4. This act shall take effect and be in force from and after its passage.

CHAPTER 423, LAWS OF 1889.

AN ACT to appropriate to the Wisconsin State Agricultural Society ten per cent. of its paid premiums.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society ten per centum of its paid premiums.

SECTION 2. On the presentation of the sworn statement of the secretary of said society, setting forth the amount due each year under this act, the secretary of state shall issue his warrant for the same which shall be paid by the state treasurer out of any money in the state treasury not otherwise appropriated.

CHAPTER 526, LAWS OF 1889.

AN ACT to provide for and regulate the printing, binding and distribution of the reports of state officers, departments, institutions and societies.

SECTION 5. And further, there shall be printed annually upon the approval and order of the commissioners of public printing, ten thousand copies of the transactions of the Wisconsin State Agricultural Society, the same to embrace the reports of the county and other agricultural societies, and such matters pertaining to the agricultural industries of the state as shall be deemed important; provided, the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin State Horticultural Society; the same to embrace such abstracts of reports of county and other horticultural societies, and such matters pertaining to the horticultural interests of the state as shall be deemed important, provided that the whole number of printed pages shall not exceed two hundred. Eight thousand copies of the transactions of the State Dairyman's Association, the same to embrace such other matters pertaining to the dairy interests of the state as shall be deemed essential;

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provided, that the whole number of printed pages shall not exceed two hundred. Twelve thousand copies of the report of the Agricultural Experiment station of the state university; provided, that the whole number of printed pages shall not exceed two hundred and fifty. Two thousand copies of each of said reports to be bound separately in cloth, all others singly in paper.

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Historical Society, ten copies to each county agricultural society and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university, to the governor, lieutenant-governor, secretary of state, state treasurer, attorney-general, state superintendent of public instruction, railroad commissioner and insurance commissioner twenty-five copies each; to the state superintendent of agricultural institutes fifty copies; to the superintendent of public property, commissioner of labor statistics, adjutant general, quartermaster general, state board of health, each ten copies; to each public library in the state two copies; to each state normal school two copies; to each of the state charitable and penal institutions, one copy, and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for the act exceed the maximum number specified, except upon written request of the officer submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CHAPTER 381, LAWS OF 1891.

AN ACT to authorize the commissioners of public lands of the state of Wisconsin to loan a portion of the trust funds of the state of Wisconsin to the Wisconsin Agricultural Society for the purchase of lands near the city of Milwaukee, and the erection of suitable buildings thereon.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. The commissioners of the public lands, with the approval of the governor of the state of Wisconsin, are hereby authorized, in their discretion to loan of the trust funds of the state a sum not exceeding one hundred and fifty thousand dollars to the Wisconsin State Agricultural Society, to be used by such society for the purchase of not less than one

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hundred acres of land situated within ten miles of the county court house in the city of Milwaukee; provided, the lands so to be purchased shall first be approved by the said commissioners as to quality and price; and provided further, that the amount so loaned by such commissioners shall not exceed two-thirds of the purchase price of the lands to be purchased by said society. And the said Wisconsin State Agricultural Society is hereby authorized to borrow such amount of said commissioners and to issue to the state of Wisconsin, by the proper officers thereof, bonds therefor. Such indebtedness shall bear interest at the rate of four per cent. per annum, payable annually, and the principal so loaned shall be paid twenty years from the date of such bonds, and such bonds shall mature and be fully paid within twenty years of the date of their issue.

SECTION 2. Said bonds shall be secured by a first mortgage upon the real estate so purchased, which shall be free and clear from any and all lien or incumbrances prior to said mortgage. Such bonds and mortgage shall be in form to most fully protect the state in every contingency and shall before acceptance, be approved as to form and execution by said commissioners. And said mortgage shall contain proper provision for the keeping of the buildings of said society upon such lands, insured for the benefit and protection of the state at all times during the pendency of such mortgage.

SECTION 3. This act shall take effect and be in force from and after its passage and publication.

Approved April 22, 1891.

CHAPTER 184, LAWS OF 1893.

AN ACT to authorize the commissioners of public lands of the state of Wisconsin to loan a portion of the general funds of the state of Wisconsin to the Wisconsin State Agricultural society, for the purposes therein named.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. The commissioners of public lands, with the approval of the governor of the state, are hereby authorized and directed to loan of the general fund of the state the sum of thirty thousand dollars to the Wisconsin State Agricultural Society, to be used by such society for the payment of its present insecuredindebtedness, and thebalance, if any, to be expended in improving said grounds, and the said Wisconsin State Agricultural Society is hereby authorized to borrow such amount of said commissioners, and to issue to the state of Wisconsin, by the proper officers thereof, bonds therefor, and to execute such mortgage and conveyances as the commissioners shall deem necessary. Such indebtedness shall bear interest at the rate of four per cent. per annum, and the principal so loaned shall be paid ten years from the date of such bonds, and such bonds shall mature and be fully paid ten years from the date of their issue.

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SECTION 2. Said bonds shall be secured by mortgage upon the real estate of said Wisconsin State Agricultural Society, which shall be free and clear from any and all liens or encumbrances prior to such mortgage, except a mortgage now held by the state of Wisconsin and a mortgage held by E. C. McFetridge covering said property. Such bonds and mortgages shall be in form to most fully protect the state in every contingency and shall before acceptance be approved as to form and execution by such commissioners, and such mortgage shall contain proper provision for the keeping of the buildings of said society upon such lands insured for the benefit and protection of the state at all times during the pendency of this mortgage.

SECTION 3. Before any money appropriated by this act shall be drawn from the state treasury as herein provided, the president, secretary and treasurer of said Wisconsin State Agricultural Society shall make and execute to the state of Wisconsin a bond in the penal sum of thirty thousand dollars with two or more good and sufficient sureties, who shall severally justify their liability under oath, such sureties and bond to be approved by the governor, and such bond shall be conditioned upon the faithful and honest application of all moneys appropriated by this act and received by such president, secretary and treasurer, or either of them, for the uses and purposes in this act specified, and a contract and verified statement of the indebtedness of said society otherwise than its indebtedness secured by mortgage, and such bond, when so made, executed and approved, shall be placed on file in the office of the secretary of state.

SECTION 4. This act shall take effect and be in force from and after its passage and publication.

Approved April 15, 1893.

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CONSTITUTION.

ARTICLE I.

OF THE NAME AND OBJECT OF THE SOCIETY.

This society shall be known as the "Wisconsin State Agricultural Society." Its object shall be to promote the advancement of agriculture, horticulture, and the mechanical and household arts.

ARTICLE II.

OF THE MEMBERS.

The society shall consist of life members, who shall pay on subscribing, twenty dollars, and of honorary and corresponding members, who shall be elected by a two-thirds vote of all the members of the executive board at any regular meeting. The presidents of county agricultural societies shall be members *ex-officio*, entitled to the same privileges as life members, and together shall be known as the general committee of the Society.

ARTICLE III.

OF THE OFFICERS.

The officers of the Society shall consist of a president, one vice-president for each congressional district of the state, a secretary, a treasurer, and seven additional members, who shall hold their respective offices for a term of one year from the first day of January next succeeding the date of their election, and until their successors shall have been elected, and all of whom, together with the ex-presidents latest in office, and the president and general secretary of the Wisconsin Academy of Sciences, Arts and Letters, shall constitute the Executive Board.

ARTICLE IV.

OF THE POWERS AND DUTIES OF OFFICERS.

The presidents and vice-presidents shall perform such duties as are common to such officers in like associations, as may be required by the Executive Board.

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The secretary shall keep the minutes of all meetings, and have immediate charge of the books, papers, library and collections, and other property of the Society. He shall also attend to its correspondence, and prepare and superintend the publication of the annual report of the Society, required by law.

The treasurer shall keep the funds of the Society and disburse the same on the order of the president, or a vice-president, countersigned by the secretary, and shall make report of all receipts and expenditures at the regular meeting of the Society in December.

The executive board shall have power to make suitable by laws to govern the action of the several members thereof. They shall have general charge of all the property and interests of the Society, and make such arrangements for the holding and management of general and special exhibitions as the welfare of the Society and the interests of industry shall seem to require.

The general committee shall be charged with the interests of the Society in the several counties where they respectively reside, and constitute a medium of communication between the executive board and the public at large.

ARTICLE V.

OF MEETINGS AND ELECTIONS.

The annual meeting of the Society for the transaction of general business, shall be held in its rooms at Madison, on the first Wednesday in December, at nine o'clock A. M., in each year, and ten days' notice thereof shall be given by the secretary in one or more papers printed in the city of Madison.

The election of officers of the Society shall be held each year during and at the general exhibition, and the exact time and place of the election shall be notified by the secretary in the official list of premiums, and in all the general programmes of the exhibition.

Special meetings of the Society will be called by order of the executive board, on giving twenty days' notice in at least three newspapers of general circulation in the state, of the time, place and object of such meetings.

At any and all meetings of the Society, ten members shall constitute a quorum for the transaction of business, though a less number may adjourn from time to time.

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ARTICLE VI.

OF AMENDMENTS.

This constitution may be amended by a vote of two-thirds of the members attending any annual meeting; all amendments having been first submitted in writing at the previous annual meeting, recorded in the minutes of the proceedings, and read by the secretary in the next succeeding meeting for the election of officers. All amendments proposed shall be subject to amendment by a majority vote at the meeting when presented, but not thereafter.

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BY-LAWS.

SECTION I.

OF OFFICERS.

The officers of the Society shall, *ex-officio*, fill the corresponding offices in the Executlve committee.

SECTION II.

OF THE DUTIES AND POWERS OF OFFICERS.

The duties of the President, in addition to those defined by the constitution and the by laws regulating the duties of the permanent committee shall be as follows, to-wit:

1. To inspect the fair grounds after they shall have been prepared for the annual exhibition by the special committee of arrangements, appointed for that purpose, and suggest such modifications or further preparations as he may deem necessary.

2. To formally open the annual fair of the society at such time as the Executive committee may prescribe, with an appropriate address.

3. As the executive head of the society, to have a general supervision and control of the entire exhibition, subject only to the authority of the Executive committee.

The duties of the Secretary, more especially defined than in the constitution shall be as follows:

1. To make a faithful record of each meeting of the Executive committee and keep such record in a condition for the convenient reference of any member thereof, at any time, also to make a record of every order drawn on the treasurer, and delivered to parties in whose favor they were so drawn—separately entering and numbering the orders drawn to pay premiums and those to pay general expenses, and so defining them—and of all moneys due the Society; in all cases holding the parties so indebted, responsible therefor, until they shall have presented him a certificate from the treasurer showing that the same has been paid.

2. To open and carry on such correspondence as may be advantageous to the Society or to the common cause of agricultural improvement, not

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only with individual agriculturists and eminent practical and scientific men of other industrial pursuits, but also with other societies or associations whose objects are kindred to ours, whether in the country or foreign lands, and to preserve a journal of such correspondence in the archives of the Society.

3. To collect and arrange for convenient examinations, standard agricultural works and periodical publications, together with such models, machines and implements as may be donated to, or otherwise required by the Society.

4. To investigate as far as practicable, the nature of fertilizers, indigenous and cultivated plants, insects injurious to vegetation, etc., and to collect and preserve such specimens thereof, as will illustrate the natural history and agricultural resources, condition and progress of the state.

5. To institute and collect reports therefrom, needed experiments relative to the preparation of the various soils of the state for economical culture, the cultivation of different grains, fruits and garden vegetables, the breeding and raising of stock, etc.

6. To visit, by the advice of the executive committee, or as his own judgment may direct, the various portions of the state, and to give lectures on the science and practice of agriculture, wherever and whenever they may be deemed most necessary and desirable.

7. To co-operate with the superintendent of public instruction and the agent of the normal school board, for the introduction and use in the schools of Wisconsin, of standard works on agriculture and other industrial arts and sciences.

8. To attend as many as possible of the industrial exhibitions of this country, particularly the county fairs of Wisconsin; to co operate with the president and special committee of arrangements, for the judicious preparation and management of our state exhibition; and to have the sole supervision and control of the offices of entry thereat.

9. To carefully prepare and superintend the publication of the annual report of the society to the governor of the state, embodying therein the proceedings of the State Agricultural Society, an abstract of the reports of the incorporated county agricultural societies of the state, and such reports, essays and addresses, or other matters of information, as may be calculated to enhance the value of said report.

Finally, it shall be his duty, not only by the means above named, but also through such other instrumentalities as he may devise, and the committee approve, to devote himself faithfully and unreservedly to the promotion of the industrial interests of the state.

It shall be the duty of the Treasurer—

1. To receive primarily and exclusively all moneys due the Society, from whatever source.

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2. To keep a full and faithful record of all receipts of moneys coming into his hands, and of the sources whence derived, in a book specially furnished by and belonging to the Society, and to have the same open at all reasonable times, to the inspection of any person or persons authorized by the executive committee to make such examination.

3. To likewise keep an exact record of every order by him paid, and such record must be verified by the proper vouchers showing that the sums therein named have been by him so paid.

SECTION III.

OF MEETINGS.

The Executive Committee shall meet annually, on the day preceding the day on which the annual meeting of the Society is held, on Monday preceding the first Tuesday of February, and again on the first day of the annual fair.

They shall also meet at the call of the secretary—the president and a vice-president of the society concurring—and may adjourn to any stated time.

SECTION IV.

OF A QUORUM.

At any meeting of the executive committee, four members thereof shall constitute a quorum for the transaction of business.

SECTION V.

OF PERMANENT COMMITTEES.

There shall be two permanent committees of the Executive committee which shall be respectively styled the *Standing Committee* and the *Finance Committee.*

The Standing Committee shall consist of the president, the secretary and the treasurer, who shall have the power in the recess of the executive committee to draw orders on the treasurer for all necessary current incidental expenses. But the Executive committee shall have authority, and are hereby required to revise the proceedings or transactions of said Standing committee, and endorse or disapprove the same.

The Finance Committee shall consist of the president and treasurer, and it shall be their duty to suggest means for increasing the revenues of the Society.

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They shall also have authority to invest any portion of the funds of the Society that may from time to time be set apart by the Executive committee for investment, disposing of such funds upon such terms and conditions as may be prescribed by the said Executive committee.

Each of the above named sub-committees shall be responsible for the faithful discharge of their duties to the Executive committee, to whom an appeal may at any time be taken from their acts or decisions.

The auditing, adjusting, allowing or rejecting of all bills, claims or demands, of whatsoever nature, against the society, and the issuing of orders upon the treasurer for payment of the same—except for the current incidental expenses of the Society, as by this section already provided for—shall devolve upon the Executive committee; and it shall be the duty of said committee to annually examine the books, papers and vouchers of the treasurer and secretary, and compare the same, and adjust the accounts between those officers and the Society, and report thereon at the annual meeting in December.

SECTION VI.

OF THE ORDER OF BUSINESS.

The following order of business shall be observed at all meetings of the Executive committee:

1. Reading of the minutes of the preceding meeting.
2. Reading of the minutes and reports of the Standing committee.
3. Reading of the minutes and reports of the Finance committee.
4. Report of Auditing committee.
5. Reports from special committees.
6. Communications from the Secretary.
7. Communications from members of the committee.
8. Unfinished business.
9. Miscellaneous business.

The order of business may be suspended, however, at any time, by a vote of the majority of the members present.

SECTION VII.

OF THE FISCAL YEAR.

The fiscal year of this Society shall commence on the first Wednesday of December in each year, and all annual reports of the year previous shall be made up to that time.

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SECTION VIII.

OF THE EXPIRATION OF THE TERMS OF OFFICE.

The terms of office of all the officers of this society shall expire on the 31st day of December of each year.

SECTION IX.

OF AMENDMENTS.

These by-laws may be amended at any regular meeting of the Executive committee by a vote of eight of the members thereof.

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MINUTES OF MEETINGS OF EXECUTIVE BOARD.

SPECIAL MEETING.

MILWAUKEE, Wednesday evening, September 12th, 1892.

President Parkinson in chair. Quorum present.

Protest of C. W. Rowe in case of award of premiums in Swine Department presented, but not entertained, it not being in due form.

Protest of Hadden, Scott & Co. against judgment of Percheron Horses was received.

Matter re-opened and A. O. Fox appointed judge to examine horses in question.

Protest of A. O. Fox of judgment of Shropshire Sheep received, and in absence of requisite witnesses, laid over.

Adjourned.

JOHN M. TRUE,
Secretary.

SPECIAL MEETINGS.

MILWAUKEE, Friday, September 16th, 1892.

Vice President Arnold presiding. Received protests of H. P. West and J. H. Pilgrim regarding exhibits in Agricultural Department. Matter referred to Messrs. Hitt and Hubbard for adjustment.

Protest of Galbraith Bros. and Hadden, Scott & Co. against award in Sweepstakes Stallion Ring, received, considered, but not sustained.

Adjourned.

JOHN M. TRUE,
Secretary.

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AGRICULTURAL ROOMS.

MADISON, December 6th, 1893.

Vice President Newton in chair. Quorum present.

On motion of Mr. Adams, adjourned until December 7th, at 9:00 A. M.

JOHN M. TRUE,
Secretary.

ADJOURNED MEETING.

December 7th, 1892.

Quorum present. President Parkinson presiding.

President appointed Messrs. Thom, Newton and Chandler committee to audit financial statements and accounts of secretary and treasurer.

Treasurer Miner submitted his annual report, which, together with the financial statement of secretary, was referred to auditing committee, such committee to report to meeting of society.

Adjourned.

JOHN M. TRUE,
Secretary.

ANNUAL MEETING.

AGRICULTURAL ROOMS.

MADISON, February 6, 1893.

President Parkinson in the chair. Roll called; quorum present.

Adjourned until February 7th, at 9 A. M.

JOHN M. TRUE,
Secretary.

ADJOURNED MEETING.

MADISON, February 6, 1893.

Meeting called to order by the president. Roll called.

Present—Messrs. Newton, Jones, Boyd, Arnold, Martin, McKinney, Fisher, Hubbard, Youmans, Miner, Parkinson and True.

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Reports of department superintendents were received. Secretary True introduced the following resolution and moved its adoption:

Resolved, That the holding of a State Fair by this Society in the fall of 1893 be made contingent upon the receipt of sufficient aid from the state to pay the indebtedness of the Society, and to make such improvements upon the fair grounds as are absolutely necessary, and the pledging of a guaranty fund of $10,000 by citizens of Milwaukee—such amount to be payable in whole or in part in case the receipts of the fair prove insufficient to pay expenses of fair and premiums offered; but the amount drawn from such fund shall not exceed the actual amount of such deficiency—$10,000 or less.

Resolved, That upon the above conditions being met the president and secretary of this society be authorized in their discretion to arrange for holding a fair September 18–22, and that they have power to revise the premium list for such fair, the aggregate of premiums offered not to exceed the amount offered in 1892, except racing purses, and that they be allowed to call to their aid in such revision the deputy superintendents elect.

Board adjourned until 2 o'clock P. M.

AFTERNOON SESSION—FEBRUARY 7TH.

Resolution pending at time of adjournment was adopted.

Messrs. Parkinson, Arnold and Jones were appointed a committee to draft memorial to legislature with reference to legislation in interests of society.

Proceeded to election of Department Superintendents for the coming year with the following result:

Superintendent of Speed—H. R. Cook, Columbus.

Superintendent of Horses—C. A. Youmans, Neillsville.

Superintendent of Cattle—A. A. Arnold, Galesville.

Superintendent of Sheep—C. M. Clark, Whitewater.

Superintendent of Swine—Geo. Wylie, Leeds.

Superintendent of Poultry—C. G. Wilcox, De Pere.

Superintendent of Agriculture—Geo. Martin, Hudson.

Superintendent of Dairy—W. A. Jones, Mineral Point.

Superintendent of Horticulture—M. A. Thayer, Sparta.

Superintendent of Machinery—T. L. Newton, Beaver Dam.

Superintentent of Manufacturers—M. M. Blackstock, Sheboygan.

Superintendent of Fine Arts—H. C. Adams, Madison.

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Superintendent of Woman's Work—Kate Peffer, Pewaukee.

Superintendent of Forage—C. T. Fisher. Wauwautosa.

Superintendent of Gates—C. M. Cottrill, Milwaukee.

Superintendent of Transportation—J. G. Boyd, Milwaukee.

Marshal—S. D. Hubbard, Mondovi.

The following resolution was adopted:

Resolved, That judges in the several departments be selected by the president, secretary and superintendent of respective departments, and that the names of such judges be published in the premium list; and that the existing rules of this Society, relating to protests of action of judges be abolished.

In accordance with request from managers of Columbian Exposition, T. L. Newton was elected a member of Advisory Council, and Messrs. Arnold and Hubbard delegates from this Society to "Good Roads Convention," at Columbian Exposition.

A. C. Parkinson was selected to act as superintendent of agricultural exhibit of Wisconsin at World's Fair.

Adjourned.

JOHN M. TRUE,
Secretary.

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MINUTES OF SOCIETY MEETINGS.

ANNUAL MEETING.

MILWAUKEE, September 16th 1892.

President Parkinson presiding. Reading of minutes dispensed with. On motion of C. C. Rogers of Milwaukee, the Secretary of the Society was instructed to cast the vote of the members present for A. C. Parkinson for President for the coming year. The motion was carried unanimously, and Mr. Parkinson declared elected.

On motion of Mr. Cottrill, of Milwaukee, the President was instructed to cast the vote of the Society for John M. True, for secretary for the coming year, which motion prevailed unanimously, and Mr. True was declared elected.

A similar motion prevailed resulting in the election of Cyrus Miner, as Treasurer for ensuing year.

Messrs. Cottrill, Ogilvie, Blackstock, McKinney and Wilcox, were appointed a committee to report a list of Vice-Presidents, and Additional Members of the Board.

Committee submitted the following report:

VICE PRESIDENTS.

1st Congressional District—N. D. Fratt, Racine.
2nd Congressional District—T. L. Newton, Beaver Dam.
3rd Congressional District—W. A. Jones, Mineral Point.
4th Congressional District—J. G. Boyd, Milwaukee.
5th Congressional District—Geo. Harding, Waukesha.
6th Congressional District—C. V. McMillan, Fond du Lac.
7th Congressional District—A. A. Arnold, Galesville.
8th Congressional District—C. G. Wilcox, De Pere.
9th Congressional District—F. M. Stephenson, Marinette.
10th Congressional District—Geo. Martin, Hudson.

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ADDITIONAL MEMBERS.

H. D. McKinney, Janesville.
C. M. Clark, Whitewater.
H. C. Adams, Madison.
Geo. Wylie, Leeds.
C. M. Cottrill, Milwaukee.
C. T. Fisher, Wauwautosa.
T. M. Blackstock, Sheboygan.
E. C. Smith, Markesan.
S. D. Hubbard, Mondovi.
C. A. Youmans, Neillsville.

Report adopted.

Motion to raise life membership fee from $20 to $40, laid over from last annual meeting, under the rules, was considered, and upon motion of Mr. Brown, action was indefinitely postponed.

Adjourned.

JOHN M. TRUE,
Secretary.

AGRICULTURAL ROOMS.
MADISON, December 7, 1892.

President Parkinson in the chair. Auditing committee of Executive Board, Messrs. Thom, Newton and Chandler, submitted their report. No quorum being present for the transaction of business, adjourned to February 6, 1893, at 7:30 o'clock P. M.

JOHN M. TRUE,
Secretary.

AGRICULTURAL ROOMS.
MADISON, February 6th, 1893.

Met pursuant to adjournment. No quorum present. Adjourned subject to call of president.

JOHN M. TRUE,
Secretary.

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MADISON, February 6th, 1892.

Meeting called by president. Quorum present. Auditing committee submitted the following report:

Your committee appointed to examine the accounts of the secretary and treasurer of the society, for the year 1892, find there has been received from all sources. $198,088.73
Vouchers to cover warrants drawn on treasurer by the secretary, were produced to the amount of 194,275.75
Leaving cash, in hands of treasurer..... .... 3,812.98

We find that the books and accounts of the secretary and treasurer fully agree.

All which is respectfully submitted,

H. C. THOM,
T. L. NEWTON,
J. C. CHANDLER,
Auditing Committee.

Dated December 7th, 1892.

On motion the report of committee was accepted. Adjourned.

JOHN M. TRUE,
Secretary.

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TREASURER'S REPORT.

To the Officers and Members of the Wisconsin State Agricultural Society:

I have the honor to submit herewith a statement of the financial transactions of your society for the year ending December 7th, 1892.

Respectfully submitted,

CYRUS MINER, *Treasurer.*

Dated, Agricultural Rooms, Madison, December 7, 1892.

RECEIPTS.

Balance from 1891	$3,416 32	
Amount from state loan	90,666 00	
Amount of bonus on purchase of land	25,000 00	
Amount from sale of material "Cold Spring Park"	1,239 15	
Amount from sale of Madison land	20,000 00	
Amount from Milwaukee subscription	25,300 00	
Amount from fair receipts	19,295 25	
Amount from sale of Milwaukee land	7,000 00	
Amount from state appropriation	4,000 00	
Amount from interest on deposits	493 98	
Amount from state 10 per cent. of premiums	1,406 80	
Amount from sale of old building on new grounds	100 00	
Amount from secretary	171 23	
Total receipts		$198,088 73

DISBURSEMENTS.

Paid warrants of 1890 and 1891	$565 49	
Paid warrants of current year	193,710 26	
Total disbursements		$194,275 75
Balance on hand		$3,812 98

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SECRETARY'S WARRANT ACCOUNT.

No.	To whom and for what issued.	Amount.
1	Jas. G. Boyd, expenses board meeting	$15 00
2	Wm. Fox, expenses board meeting	6 75
3	T. L. Newton, expenses board meeting	28 09
4	A. C. Parkinson, expenses board meeting	15 95
5	O. S. Sisson, delegate at fair La Crosse county, 1891	18 00
6	Cyrus Miner, treasurer, expenses, '90-'91	115 63
7	Cyrus Miner, treasurer, salary	100 00
8	Cyrus Miner, treasurer, livery and express	19 25
9	Loui Hart, treasurer's clerk	5 00
10	C. F. Metzer, premiums	10 00
11	Hollis Gibson, premiums	13 00
12	M. J. Cantwell, printing	7 50
13	C. E. Clough, taking down buildings Cold Spring grounds	100 00
14	W. W. Swinyer, seal	7 00
15	E. C. McFetridge, land for State Fair site	90,666 00
16	J. G. Boyd, sprinkling track at fair	5 00
17	John M. True, salary, December	150 00
18	F. L. Fuller, salary, December	83 34
19	W. U. Tel. Co., messages, December	6 15
20	Louis Auer, records of papers	1 25
21	Winkler, Flanders, Smith, Bottum & Vilas, attorneys	100 00
22	Burdick, Armitage & Allen, printing	4 00
23	LeFeber & Johnson, premiums	40 00
24	J. H. McLaughlin, 'bus at fair 1891	25 00
25	C. E. Clough, taking down buildings at Cold Spring grounds	100 00
26	State Journal Co., printing	1 05
27	W. U. Tel. Co., messages, January	7 35
28	F. L. Fuller, salary, January	83 33
29	John M. True, salary, January	150 00
30	James E. Moseley, pasteboard and rollers	1 92
31	Blank	
32	Edward Williams, premium (duplicate of No. 600)	25 00
33	Schwaab Stamp & Seal Co., 5 medals	35 00
34	Thos. Skinner, delegate at fair 1891, Marquette county	13 20
35	John Barnekow, treasurer town of Wauwautosa (taxes Stevens farm)	108 72
36	A. C. Parkinson, expense visiting fair grounds	125 00
37	J. G. Boyd, expense visiting fair grounds	125 00
38	Fairbanks, Morse & Co., scale beam	15 00
39	Alice B. Loomis, expense at winter convention	5 75
40	S. D. Hubbard, expense at board meeting	15 00
41	Wm. Wilson, expense at board meeting	12 50
42	Wm. Wilson, expense at board meeting	15 40
43	J M. Smith, expense at board meeting	9 00
44	C. T. Fisher, expense at board meeting	8 00
45	T. L. Newton, expense at board meeting	6 25
46	Geo. Wylie, expense at board meeting	5 64

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No.	To whom and for what issued.	Amount.
47	Wm. Fox, expense at board meeting	$5 00
48	H. D. Hitt, expense at board meeting	7 27
49	A. F. Lawton, speaker, winter convention	4 45
50	John M. True, expenses speakers at convention	9 55
51	John S. Eastman, redeemed tickets	2 80
52	State Journal Co., printing programs	16 00
53	A. A. Arnold, expense at board meeting	12 20
54	B. E. Sampson, expense at convention	8 00
55	F. G. Bigelow, rent Cold Spring ground	250 00
56	G. E. Morrow, expense speaker at convention	18 25
57	W. W. Cnadwick, expense speaker at convention	7 65
58	Geo. C. Hill, expense speaker at convention	7 47
59	John M. True, salary, February	150 00
60	F. L. Fuller, salary, February	83 33
61	W. W. Young, Glee club at convention	16 50
62	John Dawson, speaker convention	9 97
63	C. E. Clough, taking down buildings, Cold Spring grounds	637 00
64	C. E. Clough, moving property from Cold Spring grounds	47 15
65	C. E. Clough, services in selling property, Cold Spring grounds	75 00
66	S. R. Webster, expenses at convention	6 63
67	H. D. McKinney, expenses board meeting	4 80
68	A. X. Hyatt, speaker convention	11 00
69	Newton & Wenz, muslin for banners	110 29
70	W. U. Tel. Co., telegrams, February	2 80
71	Milwaukee Journal, subscription to May 14	3 75
72	W. U. Tel. Co., messages for January	1 60
73	John M. True, expense visiting fair ground at Des Moines and Hamlin	50 95
74	John M. True. salary, March	150.00
75	F. L. Fuller, salary, March	83 34
76	C. J. Crocker, carriage, Parkinson and Boyd	4 00
77	G. Steinhagen, surveying fair ground	30 00
78	W. F. Goodhue, survey and map of fair ground	150 00
79	John M. True, salary, April	150 00
80	N. D. Fratt, expenses	86 12
81	F. L. Fuller, salary, April	83 33
82	Cairncross & Bentley, lumber for fence	1,294 30
83	Western Union Telegraph Co., messages, March	3 70
84	Democrat Printing Co, daily and advertising	5 40
85	C. E. Clough, painting advertisements, fair	150 00
86	John Rosenthal, harness, brushes and comb	47 50
87	C. E. Clough, boarding men at fair ground	45 00
88	C. E. Clough, wages for April	10 00
89	C. E. Clough, hay, blacksmithing	16 43
90	John Lynn, work	86 37
91	W. J. Lampher, work	12 82
92	Tom Mackorich, work on fair ground	15 00
93	Will Tracy, work	5 63
94	John Griner, work	52 00
95	L. A. Gregg, oats and salt	86 73
96	W. F. Goodhue, services as engineer	364 00
97	J. E. Patton Co., paints	12 68
98	John M. True, hotel expenses, Milwaukee, April	15 00

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No.	To whom and for what issued.	Amount.
99	Western Union Telegraph Co., messages, April	$5 50
100	J. G. Boyd, horses	250 00
101	Herald Co , publishing advertisement	7 25
102	State Journal Co., daily	9 00
103	Columbia Carriage Co., wagon for fair ground	37 50
104	F. G. Bigelow, rent Cold Spring grounds	250 00
105	John M. True, salary, May	150 00
106	F. L. Fuller, salary, May	83 33
107	James E. Patton Co., paint	20 00
108	Andrus & Thayer, livery	5 00
109	Hilgendorf, Kalloge & Co., nails, tools, etc	74 81
110	Abend Post Publishing Co., advertising for bids	2 50
111	Cramer, Aikens & Cramer, advertising for bids	6 00
112	Journal Co., advertising for bids	3 00
113	Sentinel Co., advertising for bids	2 80
114	John M. True, hotel, Milwaukee, May	16 50
115	Void.	
116	George C. Cribb, steel beam plow	15 00
117	Chas. H. Welch, report convention 1892	115 60
118	James E. Patton Co., paint	49 92
119	James E. Patton Co., oil	21 70
120	C. E. Clough, paid labor on ground and board of men	377 80
121	State Journal Co., ten copies of paper	50
122	C. S. Hart, 1500 fence posts	405 00
123	W. F. Goodhue, services as engineer	60 00
124	C. A. Bentley, lumber	22 69
125	Henry Schmidt, road machine	205 60
126	John M. True, salary, June	50 00
127	John M. True, salary, June	100 00
128	F. L. Fuller, salary, June	83 34
129	Dane Abstract Co., continuance abstract title	5 25
130	Cairncross & Bentley, lumber	179 41
131	C. E. Clough, paid work on race track	100 00
132	C. E. Clough, paid car of oats	298 22
133	C. E. Clough, paid car of hay	138 65
134	James E. Patton Co., paint	24 46
135	C. E. Clough, pay roll for men and teams, track	555 55
136	H. G. Schoonmaker, Forcite powder, track	31 80
137	Martin Jewert, blacksmith work, track	3 65
138	John Dorsch & Sons, mower	43 00
139	C. E. Clough, paid wages and board of men at ground	445 10
140	George Wylie, expenses, trip to fair ground	7 50
141	A. C. Parkinson, expenses, Milwaukee	50 00
142	John M. True, expenses, Milwaukee, June	12 50
143	The Fair Pub. House, entry books	13 00
144	Craincross & Bentley, lumber	129 44
145	Bradley & Kelley, lumber	241 50
146	Cen. Label Co., stickers	12 50
147	J. E. Patton Co., paint	145 97
148	W. U. Tel. Co., messages, June	6 50
149	John Dorsch & Son, hay rake	20 00
150	A. Scott, freight and drayage	7 51

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No.	*To whom and for what issued.*	*Amount.*
151	Bradley & Kelley, lumber	$235 55
152	Bradley & Kelley, lumber	241 65
153	Bradley & Kelley, lumber	154 63
154	C. E. Clough, pay-roll, track work	667 45
155	William Wilson, poultry building	500 00
156	Geo. C. Cribb, scrapers, plows, etc	716 70
157	Geo C. Cribb, scrapers	22 40
158	J. E. Patton Co., paint	22 00
159	J. E. Patton Co., paint	14 00
160	J. E. Patton Co., paint	70 91
161	Guetzkow Bros.' Co., buildings on grounds	8,000 00
162	Bradley & Kelley, lumber	604 37
163	A. C. Parkinson, expenses	50 00
164	Wm. Wilson, poultry building	100 00
165	John M. True, salary, July	150 00
166	F. L. Fuller, salary, July	83 33
167	John Pritzioff Hardware Co., tacks	11 97
168	Ferry & Clas, architects	500 00
169	A. O. Babbitt, advertising	25 00
170	A. O. Babbitt, advertising	15 00
171	G. H. True, advertising	25 00
172	John S. Eastman, advertising	30 00
173	C. E. Clough, sundry bills	36 30
174	C. E. Clough, paid work on grounds	73 38
175	C. E. Clough, paid work on grounds	45 38
176	C. E. Clough, board of officers of society	18 50
177	J. F. Ditmar, blacksmithing	11 85
178	J. E. Patton Co, paint	48 96
179	Geo. C. Cribb, scrapers	43 00
180	Bradley & Kelley, lumber	486 64
181	Edw. Keogh, printing premium list	354 50
182	H. G. Schoonmaker, services as foreman	70 08
183	James Morgan, blankets	49 50
184	P. Gratton, teams and men grading track	525 71
185	P. Gratton, in feed from grounds	117 17
186	C. E. Clough. paid for work on track	8 25
187	P. Gratton, in feed from grounds	127 63
188	John M. True, pay-roll to July 23, track	725 77
189	C. E. Clough, board of men on track, pay-roll	63 00
190	John Lee, board of men on track, pay-roll	135 50
191	John M. True, expense July	14 80
192	John M. True, horse and freight on same	138 40
193	James Morgan, blankets	16 50
194	Arthur Babbitt, advertising	25 00
195	C. M. Sanger, harness, comb and brush	23 95
196	Marr & Richards, engraving	85 00
197	C. A. Bentley, lumber	225 14
198	C. E. Clough, pay roll and board bill July, builders	753 43
199	Chas. R. Lull, oats, 1112 bushels	378 08
200	John Lyon, painting	50 00
201	Western Union Telegraph Company, July	2 15
202	H. D. McKinney, expenses	6 84

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No.	*To whom and for what issued.*	*Amount.*
203	H Bertholds & Co., sewer pipe	$200 80
204	R. C. Reinerstein, surveying and engineering	273 00
205	G. H. True, advertising expenses	15 00
206	Nicholas Smith, printing	5 75
207	J. E. Patton Co., paints	45 59
208	Gugler Lithograph Co., posters	422 80
209	Peter Gratton, pay roll, work to August 10, track	849 52
210	John M. True, pay for grade force to August 6th	1,236 56
211	John S. Eastman, advertising	25 00
212	Geo. C. Cribb, grading tools	172 00
213	Kipp Bros., cots	117 50
214	Bradley & Kelly, lumber	235 72
215	Feed, P. Gratton, from grounds	27 00
216	Arthur Babbitt, advertising	25 00
217	Benj. M. Weil, insurance	27 00
218	Hilgendorf & Kolloge, hardware, nails, etc	234 02
219	Bradley & Kelley, lumber for stables	2,389 07
220	Geo. C. Cribb, post-hole augers	2 00
221	Rudolph Weidman, moving buildings	135 00
222	John Lyon, painting	32 00
223	W. F. Goodhue, map of track	5 00
224	Guetzkow Bros. Co., second payment on building contract	3,000 00
225	C. E. Clough, pay of Aozkossurz, Wachhose, Dodge, Pearson & Anderson	148 10
226	Cairncross & Bentley, lumber for barns	137 38
227	John M. True, August salary	150 00
228	Gordon H. True, advertising	40 00
229	F. L. Fuller, August salary	83 34
230	Sacket Wired Tag Co., tags	18 60
231	J. H. S. Johnstone, press agent	30 00
232	Guetzkow Bros., third payment on building contract	7,000 00
233	Martin Jewett, blacksmithing	12 70
234	Martin Jewett, blacksmithing	18 60
235	John Pfeifer, wagon repairs	5 30
236	Peter Grattan, pay roll, track to date	789 08
237	John Lee, board of Grattan's men to date	140 00
238	Peter Grattan, feed from grounds	28 35
239	John M. True, pay roll to August 20, track	1,795 04
240	A. C. Parkinson, expenses	50 00
241	C. E. Clough, freight on road machine	6 78
242	C. J. Crocker, livery	31 00
243	C. T. Fisher, horse	135 60
244	C. Stredy & Son, tin shingles	14 30
245	T. L. Kelly & Co., premium ribbons	156 68
246	P. Shea, full amount of grade contract	861 74
247	J. H. Perry, engineer work Shea's contract	36 75
248	John Lee, board Shea's men	199 76
249	Bank Clintonville for Arthur Babbitt, advertising	15 00
250	Wisconsin Farmer, advertising	75 00
251	H. R. Cook, advertising race	40 00
252	John Bower, shingling barns	68 62
253	John S. Eastman, advertising	30 00
254	C. E. Clough, pay roll workmen for August	1,470 36

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No.	*To whom and for what issued.*	*Amount.*
255	Jas. Perry, work as engineer	$5 00
256	Bert Thompson, work on track	20 00
257	Milwaukee Variety Iron works, rods and bolts	12 40
258	American Trotting Association, annual dues	50 00
259	G. H. True, advert sing	15 00
260	G. H. True, advertising	54 50
261	John M. True, expenses, August	25 45
262	D. S. Harkness, printing	87 00
263	Void.	
264	C'as & Ullius, work on grand stand	10,000 00
265	Arthur Babbitt, advertising	15 00
266	John Lyon, work on grounds, painting and moving fence	147 47
267	J. S. Eastman, advertising	15 00
268	A. B. Meyers, on account W. H. Green & Sons, graders	100 00
269	H. G. Schoomacher, on account Green & Sons	70 00
270	W. H. Green & Sons, grading	367 17
271	Guetzkow Bros. & Co., shingles and part payment on buildings	1,722 93
272	Hirsch Bros., account W. H. Green & Sons, graders	25 00
273	John Young, work on track	65 54
274	C. E. Clough, paid for work on grounds	251 55
275	C. E. Clough, paid for painting barns	42 50
276	Harry Schoonmacher, omnibus service	300 00
277	T. J. Fleming, interest on pro. part mortgage	566 66
278	H. G. Schoonmacher, 'bus service	50 00
279	Sylvania Band, music at fair	15 00
280	Bow Coon, delegate. Crawford county	17 50
281	Stham Agricultural Co., moose and elk	250 00
282	Wm. Raloff, shingling barn	47 00
283	Chas. Fisher, painting and moving fence	123 85
284	Columbus Cornet Band, music	75 00
285	E. S. Cummings, expenses Poultry Department	4 75
286	J. Jennis, track fence	30 00
287	John Dey, judge Agricultural Department	13 92
288	S. M. Quaw, delegate, Marathon county	16 90
289	C. & N. W. Railway, freight on roller	24 44
290	Ben Brown, carpenter work	33 75
291	Nich. Schueizer, carpenter work	36 25
292	C. W. Hachett, carpenter work	36 25
293	A. W. B anchard, carpenter work	30 00
294	Cosgrove Live Stock Co., premiums	79 00
295	John Reynolds, representative delegate Ozaukee county	6 96
296	Thomas Clark, premiums	72 00
297	J. W. Whaten, representative delegate Buffalo county	24 80
298	David McKay, judge Horse Department	32 00
299	E. T. Brown, premiums	25 00
300	Geo. Wylie, expenses and superintendent Swine Department	51 00
301	R. A. Moore, representative delegate Kewaunee county	18 40
302	Henry S. Weil, representative delegate Southwestern Association	17 12
303	Ben Thomas, Jr., representative delegate Iowa county	15 80
304	Joseph Clough, work on grounds	20 00
305	E. F. Clark, representative delegate Trempealeau county	20 40
306	C. G. Wilcox, representative delegate Brown county	15 20

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No.	*To whom and for what used.*	*Amount.*
307	J. S. Harris, judge Horticultural Department	$20 00
308	H. L Spencer, 4th money 2:30 race	50 00
309	Moses Goldberg, 1st money 2:30 race	250 00
310	Geo. Bain, Columbia county representative delegate	12 00
311	Isaac Stephenson, 2d money 2:30 race	125 00
312	F. F. John, 3d money 2:30 race	75 00
313	Geo. H. Spencer, 1st money 2:29 trot	250 00
314	Roys Bros., 2d money 2:29 trot	125 60
315	W. E. Lewis, 3d money 2:29 trot	75 00
316	J. L. K McCollum, representative delegate Richland county	13 00
317	John W. Ganes, representative delegate Dodge county	12 44
318	Geo. W. Stevenson, representative delegate LaFayette county	13 00
319	John Scully, carpenter work	27 00
320	Mrs. M. E. Warren, judge Women's Work department	12 17
321	E. C. True, clerk work	61 60
322	E Blakeslee, representative delegate Sauk county	19 00
323	Mrs. M. L. McNaughton, judge Woman's department	13 50
324	John McGill, carpenter work	44 25
325	John W. Decker, Dairy expert	39 14
326	E. B. Heimstreet, ticket seller	21 00
327	T. L. Newton, expenses board meetings	45 14
328	Peter Wakem, premiums	50 00
329	T. L. Newton, superintendent Machinery	45 00
330	T. L. Newton, paid L. D. Livermore	10 00
331	J. W. Ganes, services in secretary's office	69 65
332	N. Washburn, representative delegate Barron county	29 00
333	A. Hampton, carpenter work	26 87
334	Wm. Wilson, superintendent Department E	52 94
335	F. W. Alexander, delegate Vernon county	22 30
336	S. S. Landt, representative delegate Adams county	18 40
337	Henry Lord, delegate Grant county	20 00
338	P. J. Ryan, representative Pepin county	26 50
339	Robert J. Lean, representative Walworth county	11 20
340	William Wilson, balance on contract poultry buildings	200 00
341	E. S. Cummings, judge Poultry Department	14 00
342	J. E. Seaver, assistant superintendent Machinery Department	38 50
343	H. F. Brown, premiums	100 00
344	Morse Bros, premiums	100 00
345	O S. Sisson, representative La Crosse county	16 00
346	Sotham Agl. Co.—moose and elk	250 00
347	Cornelius Maelsen, representative Manitowoc county	8 80
348	C. L. Hood, fourth money 2:29 class	25 00
349	Alex A Arnold, superintendent Cattle Department	65 00
350	Archie H. Arnold, assistant superintendent Cattle Department	21 00
351	E. D. Jones, asssistant superintendent Department Manufactures	21 00
352	H. D. Hitt, superintendent Department Manufactures	74 30
353	S. S. Burrows, judge Department Manufactures	6 90
354	Void.	
355	Lauer & Hansen, work on track	250 00
356	John O. Smith, night-watch	10 00
357	H. G. Schoonmaker, omnibus service	750 00
358	Will Tracy, work	18 12
359	W. Lamphear, work	17 50

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No.	To whom and for what issued.	Amount.
360	G. A. Fie, tent rental	$40 00
361	C. F. Hawley, clerk work	30 50
362	Nellie Howell, clerk work	27 50
363	John Barnekow, engineer, rent engine	30 00
364	Michael Smith, engineer, rent engine	60 00
365	J. W. Allen, carpenter work	9 87
366	G. A. Kartack, clerk work	32 00
367	Galbraith Bros, premiums	20 00
368	E. S. Taylor, gate keeper	7 50
369	Charlotte A. Pritchard, clerk work	25 00
370	Hattie Trowell, clerk work	27 00
371	S. D. Hubbard, expense prior to fair	22 55
372	S. D. Hubbard, services as marshal	75 00
373	S. D. Hubbard, expense, police at fair	332 00
374	A. Hildebrand, first money, 2:25 trot	250 00
375	Joe Bassett, second money, 2:25 trot	125 00
376	Heyland Stock Farm, third money, 2:25 trot	75 00
377	H. A. Kies, fourth money, 2:25 trot	50 00
378	J. Stephenson, first money, 2:50 trot	250 00
379	E. B. Miner, second money, 2:50 trot	125 00
380	C. A. Wright, third money, 2:50 trot	75 00
381	E. S. Canfield, assistant superintendent Department E	15 00
382	E. Fifield, treasurer's clerk	21 00
383	Frank Hazelton, treasurer's clerk	21 00
384	J. C. Brownwell, treasurer's clerk	21 00
385	Robert Daley, work on track	23 00
386	C. B. Conrad, treasurer's clerk	21 00
387	W. M. Peat, treasurer's clerk	10 50
388	A. P. Ellinwood, superintendent of Privileges	91 00
389	R. C. Nicodemus, treasurer's clerk	21 00
390	Frank Randall, treasurer's clerk	21 00
391	Chas. D. Stevens, treasurer's clerk	21 00
392	John S. Hall, assistant, Agricultural Department	21 00
393	S. A. Pelton, judge, Agricultural Department	20 00
394	John S. Hall, representing Sauk county	17 56
395	George Silbernagel, treasurer's clerk	21 00
396	A. C. Senkins, treasurer's clerk	21 00
397	A. C. Whittemore, treasurer's clerk	10 50
398	Peter Wakem, premiums	25 00
399	Mrs. A. P. Ellinwood, representative delegate, Sauk county	18 40
400	M. E. Chadwick, clerk work	41 00
401	Geo. J. Kellogg, assistant superintendent, Horticultural Department	7 00
402	M. A. Thayer, superintendent Horticultural Department	60 20
403	Patrick Kabler, work on grade	19 33
404	LeGrand Lippitt, work, Agricultural Department	18 00
405	A. P. Ellinwood, redeemed dinner tickets	64 75
406	Mrs. Chas. Dean, Woman's Work Department	15 00
407	C. M. Clark, expenses prior to fair	15 00
408	C. M. Clark, superintendent Sheep Department	58 00
409	C. M. Clark, paid judge Sheep Department	10 00
410	E. J. Melis, labor, Dairy Department	21 00
411	Gordon H. True, clerk work	42 25

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No.	To whom and for what issued.	Amount.
412	C. H. Everett, assistant, Horse Department	$28 00
413	C. A. Youmans, superintendent Horse Department	73 38
414	C. A. Youmans, representative Clark county	23 38
415	W. P. Rix, representative Washington county	10 04
416	C. W. Potter, representative, Juneau county	17 80
417	M. R. Doyon, paid individual expenses	3 50
418	Cyrus Miner, mileage and expenses	9 00
419	M. R. Doyon, attendance at fair	30 00
420	Cyrus Miner, attendance at fair	40 00
421	Plankington House, board treasurer and assistant	34 50
422	William Fox, superintendent Agricultural Department	62 00
423	William Fox, expenses prior to fair	9 00
424	Mrs. H. H. Hunkins, redeemed tickets	3 50
425	J. C. Totto, clerk, work	40 50
426	C. L. Cook, fourth money, 2:50 trot	50 00
427	Jackson I. Case, added money in colt race	550 00
428	C. F. Nobles, redeemed ticket	4 75
429	John Eastman, advertising and work	20 00
430	Arthur Babbitt, advertising	10 00
431	O. L. Glazier, carpenter work	2 50
432	Daniel Williams, judge Dairy Department	10 00
433	Daniel Williams, superintendent Dairy Department	54 35
434	J. W. Swanbrough, first money, 2:33 trot	250 00
435	Williams & Nutters, music	22 00
436	W. M. Henderson, third money, 2:40 trot	75 00
437	W. G. Mosher, second money, 2:40 trot	125 00
438	W. Briggs, first money, 2:40 trot	250 00
439	F. F. John, M. D., fourth money, 2:33 trot	50 00
440	J. W. Flack, third money, 2:34 trot	75 00
441	Jackson I. Case, second money, 2:33 trot	125 00
442	John S. Rowell, fourth money, 2:40 trot	50 00
443	A. J. O'Neil, first money in running race	125 00
444	G. W. Earnest, third money in running race	45 00
445	Harry Peacock, 2nd money in running race	105 00
446	A. J. O'Neil, 1st in running dash	150 00
447	H. Peacock, 3d in special running race	37 50
448	J. A. Johnson, in 2d special running race	87 50
449	A. G. Hancock, starting judge	121 00
450	The Raphan Co., grading on track	399 20
451	H. G. Schoonmaker, work on track	100 00
452	Edward Waters, toilet room attendant	24 00
453	M. Coogan & Co., water pipe, pump, etc	1,475 00
454	H. C. Wendle, express, work	5 00
455	Minnie Prichard, clerk, work	29 00
456	Arthur Babbitt, clerk work	63 00
457	Arthur Babbitt, advertising	12 40
458	Plankington House, board	127 00
457	F. L. Fuller, salary, September	83 34
460	John M. True, salary, September	180 00
461	John M. True, bills paid during fair	9 55
462	John M. True, roll in full for track work	5,284 67
463	John S. Eastman, advertising and work	82 16

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No.	*To whom and for what issued.*	*Amount.*
464	Dan Armour, paid gate-keepers	$174 00
465	Adam Roth, redeemed dinner tickets	29 75
466	Mrs. J. LeFeber, redeemed dinner tickets	100 50
467	William Millard, agent, rent Lincoln Hall	15 00
468	H. L. Allanson, redeemed dinner tickets	100 50
469	Western Union Telegraph Co., messages, August	7 60
470	Void.	
471	J. H. Yewdale & Sons Co., printing	222 00
472	Clauder's Orchestra, music	75 00
473	Music, Baraboo Band	85 00
474	T. W. Loeber, services in Speed Department	25 00
475	Wisconsin Telephone Co., building line to grounds	25 29
476	American Express Co., transportation at fair	3 30
477	Arnold Quistorf, redeemed dinner tickets	19 75
478	C. E. Clough, paid workmen on orders	64 63
479	C. E. Clough, paid work	210 25
480	C. E. Clough, paid board	101 50
481	F. W. Scheuck, glass, etc	3 25
482	Charles R. Lull, hardware	6 95
483	L. H. Cregg, oats	24 00
484	Oscar Schloemilch, for grading (balance due Green)	138 50
485	John R. Wolf, press agent Milwaukee	100 00
486	R. A. Smith, redeemed dinner tickets	6 25
487	N. Kieffer, judge Percheron Horses	17 20
488	Mrs. V. H. Campbell, superintendent Women's Department	60 28
489	Leo H. Campbell, assistant Women's Department	30 00
490	Eva R. Campbell, assistant superintendent Women's Department	35 00
491	Mrs. Vie H. Campbell, expenses Women's Department	6 48
492	Western Union Telegraph Co., messages, September	10 57
493	Cossack Co., lithographs	489 00
494	Wisconsin Bridge and Iron Works, iron	1,000 00
495	W. S. Frazier Co., track machinery	175 00
496	Angell & Hastreiter, directory	3 00
497	Wisconsin Afro-American, advertising	5 00
498	J. H. Sanders Publishing Co., advertising	50 00
499	Hoard's Dairyman, advertising	50 00
500	Clark's Horse Review, advertising	3 00
501	Cramer, Aikens & Cramer, advertising	117 00
502	Saturday Star, advertising	25 00
503	Peck's Sun, advertising	37 50
504	Kurger Polski, advertising	4 50
505	Catholic Citizen, advertising	5 00
506	Bleuer Bros	12 00
507	American School Board Journal, advertising	5 00
508	Yenowine's News, advertising	25 00
509	Milwaukee Telegraph, advertising	40 00
510	News Publishing Co., advertising	80 25
511	P. V. Duester Co., advertising	73 5
512	Herold Co., advertising	85 80
513	Milwaukee Volkszeitung, advertising	26 40
514	Germania Publishing Co., advertising	21 40
515	Journal Co., advertising	87 75

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No.	To whom and for what issued.	Amount.
516	Abend Post, advertising	$56 0
517	Sentinel Co., advertising	161 00
518	Hoffman & Billings, hardware	7 65
519	C. J. Crocker, livery	49 00
520	Wm. Bothe & Son, hay and feed	148 12
521	Christ Kaad, express work	10 00
522	M. J. Cantwell, printing	34 25
523	J. R. Stewart, judge Fine Arts Department	6 44
524	Phillip Gross, hardware	12 00
525	Journal Co., subscription	1 25
526	Necedah Lumber Co., freight	28 80
527	A. L. Boynton, livery	21 00
528	N. W. Fuel Co., coal	41 78
529	Loell & Crone, rent of show cases	25 90
530	Edw. Keogh, printing	8 50
531	Buess & Wallaeger, windows	149 00
532	James Morgan, blankets	22 40
533	La Crosse Leader, advertising	14 00
534	R. C. Reinertsen, surveying	90 00
525	F. S. Horner, printing	4 00
536	Geo. C. Crabb, hardware	7 36
537	J. E. Patton Co., paints	239 41
538	Clark's Horse Review, advertising	18 25
539	H. C. Adams, superintendent Fine Arts Department	55 00
540	Florence Norton, assistant superintendent Fine Arts Department	33 00
551	V. Henwood, labor in Fine Arts Department	26 00
542	Kipp Bros., mattresses	11 75
543	Art Powers Eng. Co , cut of track	13 42
544	J. Josten, painting signs	10 00
545	J. R. Stuart, judge Fine Arts Department	13 00
546	C.. M. & St. P. R'y, freight	88 49
547	John Schroeder Lumber Co, lumber	71 68
548	R. S Baird Co., speed badges	12 00
549	Reliance Wire Work Co., wire guards	4 00
550	Hirsch Bros., plow beam	4 50
551	A. L. Chase, board of McKinney.	15 75
552	Hoffman & Billings, gong bell	38 60
553	J. J. Sutton, straw	66 23
554	Julius Andrae, wire	3 57
555	J Widmire, blacksmith	56 10
556	M Coogan & Co., pipe, boiler, etc	585 77
557	M. Coogan & Co., plumbing	20 00
558	Chas. Lawrence, judge Swine Department	21 80
559	John M. True, freight	29 90
560	Morning Chronicle, advertising	5 00
561	F. P. Hanchett, work, office	22 00
562	J. N. Chamberlin, assistant in Dairy Department	12 00
563	C. T. Fisher, expenses forage department	155 50
564	C. T. Fisher, forage	163 94
565	M. Foley, forage	121 15
566	Dan Pilgrim, forage	134 13
567	Geo. Ryan, forage	156 58

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No.	To whom and for what issued.	Amount.
568	O J. Swan, forage	$64 05
569	A. H. Swan, oats	23 82
570	Henry Vogel, oats	23 22
571	H. R. Cook, services Speed department	80 00
572	W. C. Aldrich, premiums	20 00
573	Geo. Allen & Son, premiums	101 00
574	Frank Austerman, premiums	8 00
575	Peter Ammon, premiums	40 00
576	Mrs. N. E. Allen, premiums	10 00
577	Mrs. F. L. Aude, premiums	7 00
578	H. A. Briggs, premiums	237 00
579	C. T. Bradley, premiums	20 00
580	M. J. Brew, premiums	8 00
581	H. F. Brown, premiums	151 00
582	Brookside Farm Co., premiums	251 00
583	A. E. Baker, premiums	90 00
584	J. R. Brabazon, premiums	161 00
585	H. J. Buchen, premiums	10 00
586	A. Bahr, premiums	10 00
587	Browning, King & Co., premiums	10 00
588	Mrs. Mary Bell, premiums	9 00
589	Claude Beebe, premiums	15 00
590	Julia Brown, premiums	13 00
591	Mrs. F. G. Birkel, premiums	1 00
592	Mrs. John Bickels, premiums	13 00
593	R. M. Boyd, premiums	1 00
594	Genevieve Bartels, premiums	64 00
595	Mrs. Carrie Baerwald, premiums	12 00
596	Mrs. H. M. Bingham, premiums	6 00
597	J. E Corrigan, premiums	12 00
598	Henry Campbell, premiums	31 00
599	J. N. Chamberlin, premiums	26 00
600	Cosgrove Live Stock Co., premiums	100 00
601	Currie Bros., premiums	71 00
602	Thos. Clark, premiums	81 00
603	Mrs. W. A. Clapp, premiums	5 00
604	Columbia Carriage Co., Milwaukee, premiums	28 00
605	Columbia Carriage Co., Ohio, premiums	3 00
606	Clement, Williams & Co., premiums	41 00
607	Mrs. A. B. Chamberlin, premiums	28 00
608	James T. Clark, premiums	18 00
609	Mrs. J. M. Chadwick, premiums	14 00
610	Pearl H. Campbell, premiums	5 00
611	J. H. Dixon, premiums	26 00
612	Davis & Benedict, premiums	261 00
613	G. DeGelleke, premiums	3 00
614	Dasson & Blank, premiums	20 00
615	John Dorsh & Son, premiums	35 00
616	Winifred Davis, premiums	6 00
617	Mrs. L. Dwelle, premiums	6 00
618	Meda Deane, premiums	3 00
619	John Esch & Sons, premiums	8 00

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No.	*To whom and for what issued.*	*Amount.*
620	H. Eckhart, premiums	$3 00
621	Mrs. A. P. Ellinswood, premiums	1 00
622	David Fergyson, premiums	40 00
623	H. J. Flick, premiums	15 00
624	A. O. Fox, premiums	31 00
625	Jacob J. Finger, premiums	59 00
626	C. J. Frazer, premiums	28 00
627	M. C. Foley, premiums	4 00
628	John Frick, premiums	60 00
629	Mrs. M. C. Foley, premiums	10 00
630	Mrs. Hattie Foote, premiums	11 00
631	Miss Anna Frey, premiums	2 00
632	Wm, Fox, premiums	85 00
634	J. H Gilfillan, premiums	276 00
635	Gillett & Son, premiums	244 00
636	Galbraith Bros., premiums	242 00
637	Greengo & Hinkley, premiums	51 00
638	Void.	
639	D. C. Graham, premiums	10 00
640	Peter Wakem, premiums	62 00
641	Geo. W. Groesbeck, premiums	19 00
642	Nelson Greengo, premiums	8 00
643	John Grape, premiums	52 00
644	Gimbel Bros., premiums	10 00
645	J. J. Groff, premiums	9 00
646	Mrs. Geo. Gunther, premiums	12 00
647	Hadden, Scott & Monat, premiums	230 00
648	Chester Hazen, premiums	75 00
649	Geo. Harding & Son, premiums	43 00
650	Geo. C. Hill & Son, premiums	143 00
651	Frank Harding, premiums	211 00
652	Chas. T. Hill, premiums	18 00
653	J. S. Hall, premiums	18 00
654	Arnold High, premiums	35 00
655	Chas. Hirschinger, premiums	38 00
656	A. L. Hatch, premiums	11 00
657	Clara Hartonge, premiums	2 00
658	F. E. Hoyt, premiums	5 00
659	Hanson's Empire Fur Co., premiums	10 00
660	Mrs. J. Hamilton, premiums	32 00
661	F. W. Heine, premiums	15 00
662	Henry Hess, premiums	8 00
663	Mrs. Dan Huntley, premiums	2 00
664	M. F. Hilman, premiums	2 00
665	Miss Anna Helberg, premiums	1 00
666	Mrs. A. J. Hayes, premiums	2 00
667	Mrs. A. F. Higbee, premiums	6 00
668	T. H Inman, premiums	126 00
669	D. B. Jones, premiums	50 00
670	W. A. Jones, premiums	57 00
671	Geo. Jeffrey, premiums	52 00
672	Void.	

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No.	To whom and for what issued.	Amount.
673	Miss Anna Jacobs, premiums	$1 00
674	R. S. Kingman, premiums	219 00
675	Frank Kizer, premiums	22 00
676	Mrs. C. C. Kingsley, premiums	19 00
677	Kalamazoo Carriage Co., premiums	11 00
678	Miss Marion Kavanaugh, premiums	32 00
679	Mrs. Jean Kavanaugh, premiums	117 00
680	Miss A. M. Korizek, premiums	3 00
681	Mrs. J. G. Kestol, premiums	9 00
682	James Lyall, premiums	45 00
683	R. D. Lowell, premiums	38 00
684	W. M. Tipton, premiums	30 00
685	A. J. Lovejoy & Son, premiums	117 00
686	J. R. Love, premiums	38 00
687	A. J. Luebke, premiums	13 10
688	J. C. Loomis, premiums	41 00
689	Luitink & Sons, premiums	5 00
690	Miss Ella Leonard, premiums	37 00
691	H. D. McKinney, premiums	42 00
692	E. B. Miner, premiums	6 00
693	Morse Bros., premiums	36 00
694	A. E. Baker, premiums	123 00
695	McCauley & Brown, premiums	160 00
696	Geo. McKerrow, premiums	391 00
697	Harvey Marr, premiums	32 00
698	E. Musselman, premiums	35 00
699	Katie Marsh, premiums	5 00
700	Nick Mauer, premiums	2 00
701	Milwaukee Buggy Co., premiums	16 00
702	S. J. Manchester, premiums	7 00
703	Miss Nellie Manchester, premiums	28 00
704	National Shire & Hackney Horse Co., premiums	209 00
705	Northwestern Carriage & Sleigh Co., premiums	22 00
706	L. L. Olds, premiums	14 00
707	Fred Pabst, premiums	139 00
708	Fred Pabst, Jr., premiums	98 00
709	J. H. Pitcher, premiums	56 00
710	Palmer & Noblet, premiums	160 00
711	J. H. Pilgrim, premiums	22 00
712	D. S. Pilgrim, premiums	8 00
713	Kate F. Peffer, premiums	26 00
714	A. J. Phillips, premiums	28 00
715	J. S. Palmer, premiums	114 00
716	Pitcher & Manda, premiums	8 00
717	C. K. Plumb, premiums	24 00
718	Mrs. O. Pratt, premiums	90 00
719	Martha Patitz, premiums	20 00
720	Alfred Paul, premiums	5 00
721	Mrs. E. O. Parker, premiums	19 00
722	James Rae, premiums	48 00
723	Rohrer Bros., premiums	60 00
724	Rust Bros., premiums	145 90

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No.	To whom and for what issued.	Amount.
725	E. L. Rawson, premiums	58 00
726	C. W. Rowe, premiums	58 00
727	M. W. Reed, premiums	8 00
728	E. G. Roberts, premiums	139 00
729	J. C. Reinsing, premiums	35 00
730	L. B. Root, premiums	15 00
731	G. W. Ringrose, premiums	53 00
732	Mrs. C. H. Root, premiums	94 00
733	Roebel & Reinhardt	105 00
734	Stand. Trotting Horse Co., premiums	20 00
735	D. Silvernail, premiums	12 00
736	F. E. Swan, premiums	60 00
737	R. A. Sullivan, premiums	10 60
738	Schuenke & Luebke, premiums	2 50
739	M. E. Spring, premiums	3 00
740	Moses Stephenson, premiums	6 00
741	D. M. Sechler, premiums	7 00
742	Saveland, Field & Co., premiums	3 00
743	Stoughton Wagon Co., premiums	15 00
744	Mrs. William Sweeney, premiums	3 00
745	Mrs. M. A. Stevens, premiums	15 00
746	Miss Ida Sprague, premiums	5 00
747	F. W. Tratt, premiums	216 00
748	A. G. Tuttle, premiums	55 00
749	Geo. Townsend, premiums	50 00
750	Henry Tarrant, premiums	10 00
751	Wm. Toole, premiums	9 00
752	C. Tredupp, premiums	37 00
753	Mrs. G. E. Talbert, premiums	3 00
754	Mrs. F. W. Tratt, premiums	4 00
755	Uihlein Bros., premiums	110 00
756	Mrs. S. A. VanValkenburg, premiums	4 00
757	E. von Breisen, premiums	3 00
758	George Warner, premiums	40 00
759	Edward Williams, premiums	20 00
760	R. D. Warner, premiums	44 00
761	J. F. Wegge, premiums	8 00
762	Mark West, premiums	42 00
763	H. R. West, premiums	102 00
764	C. Wynoble, premiums	48 00
765	F. D. Widder, premiums	85 00
766	E. Widder, premiums	30 00
767	Robert Wittke, premiums	3 00
768	Whitnall & Rademaker, premiums	3 00
769	Wisconsin Wagon Co., premiums	5 00
770	Miss Ida Windish, premiums	20 00
771	Yorgey & Rich, premiums	11 00
772	Zimmerman, Syberg & Co., premiums	15 00
773	Margaret Zimmerman, premiums	6 00
774	W. C. Gibson, premiums	10 00
775	Mrs. Geo. Gunther, premiums	1 00
776	A. Hawkins, typewriting	4 00

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No.	*To whom and for what issued.*	*Amount.*
777	White Sewing Machine Co., premiums	$10 00
778	Mrs. R. E. Jones, premiums	3 00
779	Robt. Wittke, premiums	20 00
780	Wisconsin Agriculturist, advertising	75 00
781	Andrus & Thayer, livery	11 80
782	Art Press Co., electros	7 20
783	Columbia Carriage Co., rent of tent	15 00
784	D. W. Howie, coal	6 50
785	A. E. Stroud, work on track	19 35
786	S. R. Webster, judge Cattle Department	30 10
787	J. Langenberger, lumber	185 76
788	Durr & Rugee, lumber	1,196 92
789	John M. True, expenses in Milwaukee	9 65
790	F. C Austin Mfg. Co., use of roller	50 00
791	C. B. Downing, loading roller	5 00
792	F. N. Durbin, nails	2 40
793	A. H. Gardner, dynamite cap	85
794	Trimborn Bros., lime	7 50
795	Marr & Richards, engraving	13 65
796	C. Preusser Jewelry Co., medals	20 00
797	J. E. Patton, paints	12 00
798	C. E. Clough, pay of laborers	202 86
799	John Griner, work	38 00
800	Wauwautosa Stone Co., stone	62 48
801	John Harriman, livery	5 00
802	C. Fisher, labor	11 10
803	Philip Gross, tin cups	1 60
804	R. C. Rinerstsen, survey track	36 00
805	Mrs. S. J. Manchester, stolen articles	21 50
806	Ida Windish, stolen articles	7 00
807	W. U. Tel. Co., telegrams, September	2 55
808	F. L. Fuller, October salary	83 33
809	John M. True, October salary	150 00
810	C. E. Clough, opening track ditches	79 38
811	C. E. Clough, opening track ditches	100 00
812	Burt McCoy, carpenter work	23 62
813	John M. True, expenses attending Western Fair Circuit Convention, Chicago	12 97
814	Boynton, Taylor & Co., lumber	500 00
815	Guy Clough, work	20 00
816	C. E. Clough, shovels	3 00
817	C. E. Clough, paid freight on roller	12 00
818	Chicago Horseman, advertising	17 00
819	C. E. Clough, labor	138 40
820	H. A. Phillips, judge Dairy cattle	14 20
821	State Journal, printing	20 00
822	Democrat, printing	16 75
823	J. M. True, salary, November	150 00
824	F. L. Fuller, salary, November	83 33
825	Geo. C. Cribb, plow point	2 50
826	W. U. Tel. Co., messages, October	1 55
827	John Whitlett, representative delegate Jefferson county	16 02

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No.	*To whom and for what issued.*	*Amount.*
828	E. von Briesen, stolen exhibit	$7 50
829	C. J. Crocker, livery	4 00
830	L. H. Gregg, grain	69 81
831	Martin Jewert, blacksmith work	111 85
832	A. C. Parkinson, expenses	86 00

Your committee appointed to examine the accounts of the secretary and treasurer of Society for the year 1892, find that the books and accounts of these officers fully agree. All of which is respectfully submitted.

H. C. THOM,
T. L. NEWTON,
J. C. CHANDLER,
Auditing Committee,

MADISON, December 7, 1892.

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ADDRESS OF GOVERNOR GEO. W. PECK AT STATE FAIR, SEPT. 14th, 1892.

Mr. President and fellow citizens:

I appear before you today to assist at the dedication of what may be well considered the finest fair grounds in the United States, and that probably means the finest in the world. This society, to bring about this grand result, has had a constant struggle for almost a quarter of a century, beginning as a traveling state agricultural society, a missionary among the people, going about from place to place with great prospects and anticipations of success, and often closing its country fairs in debt and returning to its headquarters discouraged. It has gone on against all of these misfortunes with the constant idea in view that some day, as Wisconsin grew more prosperous and the people more interested in the fairs of this society, that it might point with pride to itself as an association, well off in the world's goods, and well provided with a permanent home, such as we see here to-day.

But for the fact that this grand society has been officered and controlled by the most vigorous western men that our state could produce, failure must have come—a permanent failure with no hope of recovery. When you reflect, fellow citizens, that these men have worked night and day for years, without money or any prospect of remuneration, to bring about this result, you may be, as I am, proud of them, every one, and if this society meets with the patronage that it should in the future, I trust that before we are all gathered to our Father's that there may be a monument, upon the eminence close by, to the enthusiastic officers and working life members of the Wisconsin State Agricultural Society.

When you decided to make the vicinity of Milwaukee

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your permanent home, you builded better than you knew. Since you have been here the city of Milwaukee has gained in population almost 100,000. It would be but fair to grant to the society some of the credit for this great increase in population. It has brought hundreds of thousands of people into the limits of this city, many of whom have seen that it was the finest city to be found anywhere, and have become permanent residents of it. Wealthy citizens of other parts of the state have become permanent residents, and many who are poor have come to this city, following the State Agricultural Society, where they may earn bread without too much work, and without too much trouble to get their pay. So it is but proper that this city, for which you have done so much, should at all times feel that it is its duty to fill your grounds on every occasion when you shall hoist your flag and say that you are ready to entertain them. It should be the pride of every citizen of Milwaukee to patronize this society, as I am sure it will. The people of the whole state will do their share in the future, come from what branch of business they may, as their pride in our agricultural society is as great as the pride of our own officials, and with the people of the whole state having a kindly interest, success is sure.

It is proper that a state which excels in everything that it produces, either from the soil, from the mine, or from the hands of the mechanics in the manufactories, should excel in this enterprise, which is as representative of the prosperity of the state as any institution that we have.

Though we are unable to control the elements in all cases, let us hope that in the future the sun will shine upon us when we least expect it ; the sun in the heavens as well as the sun of prosperity, and let us not be discouraged though we may fail one day. Let the watchword of the Wisconsin State Agricultural Society be the same as that of the state, "Forward." These older gentlemen who have put so many years of their lives in the society must in time pass away. Let the young men of the state be trained to remember that the State Agricultural Society is an institu-

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tion that they should be as proud of as their fathers. Let them take places of trust in connection with it, so that when the older gentlemen lay down their burden there may be strong arms and willing hearts among the young men, their sons or their grandsons, to take this society where they leave off, and push it forward and keep it on a par, if not ahead, of all in this country, until the words, "Wisconsin State Agricultural Society," shall mean that there is none other like is in the world.

I will not detain you longer from the pleasures of the day which are about to begin, but will say that I predict for you great prosperity in the future, and am sure that no labor on the part of any citizen of Wisconsin will be lacking to make this association the success that it ought to be.

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AWARD OF PRIZES IN SPEED DEPARTMENT.

STARTING JUDGE—A. G. HANCOCK, CHICAGO.

2:30 *Class—Pacing.*

1st, Jim F, owned by M. Goldberg, Marion	$250 00
2d, Henry H, owned by Isaac Stephenson, Marinette	125 00
3d, Miss Crull, owned by F. F. John, Milwaukee	75 00
4th, Leo S, owned by H. L. Spencer, Delavan	50 00

2:29 *Class—Trotting.*

1st, Prince H, owned by G o. H. Spencer, Ironwood, Mich	250 00
2d, Mira, owned by Roys Bros., Columbus	125 00
3d, Gray Swigert, owned by W. E. Lewis, Patch Grove	75 00

2:50 *Class—Trotting.*

1st, Oliver, owned by I. Stephenson, Marinette	250 00
2d, Maggie Chief, owned by E. B. Minor, Mukwanago	125 00
3d, Bill, owned by C. A. Wright, Sharon	75 00
4th, Duke Sprague, owned by C. L. Hood, La Crosse	25 00

2:25 *Class—Trotting.*

1st, Dan S, owned by A. Hildebrand, Oconomowoc	250 00
2d, Joe Bassett, Jr., owned by Joe Bassett, Lake Geneva	125 00
3d, Valusia, owned by Heyland Stock Farm, Milwaukee	75 00
4th, Swigert K, owned by H. A. Kies, Burlington	50 00

2:33 *Class—Trotting.*

1st, Lee Forester, owned by J. W. Swanbrough, Waukegan, Ill.	250 00
2d, Bonnie Phallas, owned by J. I. Case, Racine	125 00
3d, Flack's Mambrino Patchen, owned by J. W. Flack, Milwaukee	75 00
4th, Jennie Moody, owned by F. F. John, Milwaukee	50 00

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2:40 Class—Trotting.

1st, Dolly S., owned by W. Briggs, Racine	250 00
2d, Lockhart, owned by W. G. Moshier, Prairie du Chien	125 00
3d, Sam. Hill, owned by F. Stoppenbach, Jefferson	75 00
4th, Gladys Sprague, owned by John S. Rowell, Beaver Dam	50 00

One Mile Dash—Running.

1st, Artemas, owned by A. J. O'Neill, Bloomington	125 00
2d, Oakland, owned by Harry Peacock, Shullsburg	105 00
3d, Loupe, owned by G. W. Earnest, Shullsbury	45 00

One Mile Dash—Running—Special.

1st, Artemas, owned by A. J. O'Neill, Bloomington	150 00
2d, Merg, owned by J. A. Johnson, Bloomington	87 50
3d, Oakland, owned by Harry Peacock, Shullsburg	37 50

STAKE RACES.

Milwaukee Stake for 3 year old eligible to 2:40 Class—Trotting.

1st, Flora Milo, owned by J. C. Pfeiffer, Milwaukee.....
2d, Income, owned by Fred. Pabst, Jr., Milwaukee.....
3d, Simmona, owned by Jackson I. Case, Racine.....

Juvenile Stake for 2 year olds, eligible to 3:00 Class—Trotting.

1st, Phallamont Sprague, owned by H. D. McKinney, Janesville
2d, May Bee, owned by Brew Bros., Milwaukee.....
3d, Leta Waters, owned by W. H. Aldrich, Burlington.....

Futurity Stake for foals of 1888.

1st, Pacolet, owned by Jackson J. Case, Racine.....

Breeders' Stake for four-year olds, eligible to 2:35 class—Trotting.

1st, Espiranza, owned by James Cutler, Fairfield.....
2d, Patriot, owned by Jackson I. Case, Racine.....

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Wisconsin Stake for three-year-olds, eligible to 2:45 class—Trotting.

1st, Clarence Phallamont, owned by H. D. McKinney, Janesville,
2d, Miss Ida, owned by F. J. Ayers, Burlington.....
3d, Pacoleb, owned by Jackson I. Case, Racine.....
4th, Flora Milo, owned by J. C. Pfeiffer, Milwaukee.....
5th, Marcano, owned by Uihlein Bros., Milwaukee.....

State Fair Stake for four-year-old, eligible to 2:30 class—Trotting.

1st, Rena Rolfe, owned by Jackson I. Case, Racine.....
2d, Flurry, owned by J. G. Sherman, Chicago, Ill.....

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AWARD OF PREMIUMS AT STATE FAIR OF 1892.

DEPARTMENT A.—HORSES.

CLASS 1.—*Percherons.*

JUDGE—N. KIEFFER—Baraboo.

STALLIONS.

Best stallion 4 years old and over.

No.	563	Hadden, Scott and Monat, Janesville, Wis.....	$40 00
	563	Hadden, Scott and Monat, Janesville, Wis...	20 00

Best stallion 3 and under 4.

	966	Fred. Pabst, Milwaukee, Wis.....	20 00
	82	H. A. Briggs, Elkhorn, Wis.....	12 00

Best stallion 2 and under 3.

	82	H. A. Briggs, Elkhorn, Wis.....	20 00
	82	H. A. Briggs, Elkhorn, Wis.....	10 00

Best stallion 1 year and under 2.

	82	H. A. Briggs, Elkhorn, Wis..... ...	15 00
	966	Fred. Pabst, Milwaukee, Wis.....	8 00

Best stallion colt under 1 year.

	966	Fred. Pabst, Milwaukee. Wis.....	15 00
	82	H. A. Briggs, Elkhorn, Wis.....	8 00

MARES.

Best brood mare and colt.

	82	H. A. Briggs, Elkhorn, Wis.....	20 00
	82	H. A. Briggs. Elkhorn, Wis	15 00

Best mare 4 years and over.

	966	Fred. Pabst, Milwaukee, Wis.....	20 00
	966	Fred. Pabst, Milwaukee, Wis.....	12 00

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Best mare 3 and under 4.

No. 82	H A. Briggs, Elkhorn, Wis	$20 00
966	Fred Pabst, Milwaukee, Wis	10 00

Best mare 2 and under 3.

966	Fred Pabst, Milwaukee, Wis	15 00
82	H. A. Briggs, Elkhorn, Wis	8 00

Best filly 1 year and under 2.

966	Fred Pabst, Milwaukee Wis	15 00
966	Fred Pabst, Milwaukee Wis	8 00

Best filly under 1 year.

82	H. A. Briggs, Elkhorn, Wis	12 00
966	Fred Pabst, Milwaukee, Wis	6 00

BREEDING RINGS.

Best breeding stallion as shown with 3 of his colts, either sex, under 4 years old.

82 H. A. Briggs, Elkhorn, Wis ..... Gold Medal

Best brood mare as shown with 2 of her colts, either sex, under 4 years old.

82 H. A. Briggs, Elkhorn, Wis ..... Gold Medal

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CLASS 2.—*Clydesdales.*

STALLIONS.

JUDGE—DAVID MCKAY—Ft. Wayne, Ind.

Best stallion 4 years old and over.

No.	491	Galbraith Brothers, Janesville, Wis.....	$40 00
	491	Galbraith Brothers, Janesville, Wis.....	20 00

Best stallion 3 years old and under 4.

491	Galbraith Bros., Janesville.....	20 00
491	Galbraith Bros., Janesville.....	12 00

Best stallion 2 years old and under 3.

491	Galbraith Bros., Janesville.....	20 00
1060	James Rae, Janesville.....	10 00

Best stallion 1 year old and under 2.

726	R. D. Lowell, Sharon, Wis.....	15 00
726	R. D. Lowell, Sharon, Wis.....	8 00

Best stallion colt under 1 year.

491	Galbraith Bros., Janesville, Wis.....	15 00
1060	James Rae, Janesville, Wis.....	8 00

MARES.

Best brood mare and colt.

1060	James Rae, Janesville, Wis.....	20 00
491	Galbraith Bros., Janesville, Wis.....	15 00

Best mare 4 years old and over.

726	R. D. Lowell, Sharon, Wis.....	20 00

Best mare 3 years old and under 4.

491	Galbraith Bros., Janesville, Wis.....	20 00
491	Galbraith Bros., Janesville, Wis.....	10 00

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GOWRIE'S CHIEF.

From Blairgowrie Stock Farm, Madison, Wis.

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Best mare 2 years old and under 3.

No. 727 James Lyall, Verona, Wis..... $15 00

Best filly 1 year old and under 2.

727 James Lyall, Verona, Wis..... 15 00

Best filly under 1 year.

727 James Lyall, Verona, Wis..... 12 00

Best brood mare as shown with two colts either sex, under 4 years.

726 R. D. Lowell, Sharon, Wis..... Gold Medal

CLASS 3—*English Shires.*

STALLIONS.

JUDGE—DAVID MCKAY, Fort Wayne, Ind.

Best stallion, 4 years old and over.

491 Galbraith Bros., Janesville, Wis..... 40 00
884 National Shire and Hackney Horse Co., Neillsville, Wis..... 20 00

Best stallion 3 years and under 4.

491 Galbraith Bros., Janesville, Wis..... 20 00
884 Nat. Shire and Hackney Horse Co., Neillsville, Wis... 12 00

Best stallion 1 year old and under 2.

884 Nat. Shire and Hackney Horse Co., Neillsville, Wis... 15 00

Best stallion colt under 1 year.

884 Nat. Shire and Hackney Horse Co., Neillsville, Wis... 15 00
884 Nat. Shire and Hackney Horse Co., Neillsville, Wis... 8 00

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MARES.

Best brood mare and colt.

No.	884	Nat. Shire and Hackney Horse Co.. Neillsville, Wis..	$20 00

Best mare 4 years old and over.

	491	Galbraith Bros., Janesville, Wis	20 00
	884	Nat. Shire and Hackney Horse Co., Neillsville, Wis..	12 00

Best mare 1 year and under 2.

	884	Nat. Shire and Hackney Horse Co., Neillsville, Wis..	15 00

CLASS 4.—*Other Pure Bred Draft Horses not included in Classes 1, 2 and 3.*

JDUGE—DAVID MCKAY, Fort Wayne, Ind.

STALLIONS.

Best stallion 3 years old and over.

	563	Hadden, Scott & Monat, Janesville, Wis.....	40 00

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CLASS 5.—*Cleveland Bays and Hackneys.*

JUDGE—C. M. CLARK, Whitewater.

STALLIONS.

Best stallion 3 years old and over.

No. 563	Hadden, Scott & Monat, Janesville. Wis.....	$40	00
884	National Shire and Hackney Horse Co., Neillsville, Wis	20	00

Best stallion 2 years old and over.

491	Galbraith Bros., Janesville, Wis	20	00
1060	James Rae, Janesville, Wis	10	00

MARES.

Best brood mare and colt.

884	National Shire and Hackney Horse Co., Neillsville, Wis.	20	00

CLASS 6.—*French Coach, Oldenburg, German Coach and Orloffs.*

JUDGE—C. M. CLARK, Whitewater.

STALLIONS.

Best stallion 3 years old and over.

1368	George Warner, Benton, Ill	40	00
563	Hadden, Scott & Monat, Janesville, Wis...	20	00

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CLASS 7—*Trotting Horses, Registered.*

JUDGE—C. M. CLARK, Whitewater.

STALLIONS.

Best stallion, 4 years old and over.

No. 1242	Uihlein Bros., Milwaukee, Wis	$40 00
574	Chester Hazen, Brandon, Wis.	20 00

Best stallion, 3 years old and under 4.

820	H D. McKinney, Janesville, Wis	20 00
1242	Uihlein Bros., Milwaukee, Wis	12 00

Best stallion, 2 years old and under 3.

1242	Uihlein Bros., Milwaukee, Wis	20 00
820	H. D. McKinney, Janesville, Wis	10 00

Best stallion 1 year old and under 2.

1242	Uihlein Bros., Milwaukee	15 00
980	Fred. Pabst, Jr., Milwaukee	8 00

Best stallion colt under 1 year old.

574	Chester Hazen, Brandon	15 00

MARES.

Best brood mare and colt

980	Fred. Pabst, Jr , Milwaukee	20 00
574	Chester Hazen, Brandon	15 00

Best mare, 4 years old and over

1148	Standard Trotting Horse Co., Kenosha	20 00
820	H. D. McKinney, Janesville	12 00

Best mare, 3 years old and under 4.

92	C T. Bradley, Milwaukee	20 00
574	Chester Hazen, Brandon	10 00

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Best mare 2 years old and under 3.

No.	574	Chester Hazen, Brandon, Wis	$15 00
	106	M. J. Brew, Milwaukee, Wis	8 00

Best filly 1 year old and under 2.

1242	Uihlein Bros., Milwaukee, Wis	15 00
1243	Uihlein Bros., Milwaukee, Wis	8 00

Best filly under 1 year old.

883	J. E. Corrigan, Cedarburg, Wis	12 00

BREEDING RINGS.

Best breeding stallion as shown by three of his colts, either sex, under 4 years old.

1242 Uihlein Bros,, Milwaukee, Wis.....Gold medal

Best brood mare as shown with two of her colts, either sex, under 4 years old.

574 Chester Hazen, Brandon, Wis.....Gold medal

CLASS 8—*Grade Draft Horses.*

JUDGE—DAVID MCKAY, Ft. Wayne, Ind.

Best mare or gelding 3 years old and over.

No.	82	H. A. Briggs, El horn	$12 00

Best mare or gelding 2 years old and under 3.

82	H. A. Briggs, Elkhorn	10 00
82	H. A. Briggs, Elkhorn	5 00

Best filly or gelding 1 year old and under 2.

726	R. D. Lowell, Sharon	10 00

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Best sucking colt or filly.

No.	82	H. A. Briggs, Elkhorn	$10 00

Best full blooded stallion as shown with 3 of his grade colts.

H. A. Briggs, Elkhorn.....Gold Medal.

CLASS 10—*American Coach or Carriage Horses.*

JUDGE—C. M. CLARK, Whitewater.

Best stallion, 3 years old and over.

1210	W. M. Tipton, Kenosha	30 00
563	Hadden, Scott & Monat	20 00

Best mare or gelding, 3 years old or over, 15¾ hands.

1144	D. Silvernail, Mukwanago	12 00
818	E. B. Miner, Mukwanago	6 00

CALSS 11—*Heavy Draft Horses.*

JUDGE—C. M. CLARK, Whitewater.

Best pair heavy horses, weighing 3200 lbs. or over.

82	H. A. Briggs, Elkhorn	20 00
966	Fred Pabst, Milwaukee	10 00

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CLASS 12—*Matched Horses and Roadsters.*

JUDGE—C. M. CLARK, Whitewater.

Best pair matched carriage horses, 15 hands 3 inches or over.

No. 1122	F. E. Swan, Wauwatosa	$50 00
168	Henry Campbell Evansville	30 00

Best single carriage horse, 15 hands 3 inches or over.

980	Fred Pabst, Jr., Milwaukee	20 00
1122	F. E. Swan, Wauwatosa	10 00

Best pair of roadsters—fifteen hands or over.

402	David Ferguson, Milwaukee	40 0 0
15	W. H. Aldrich, Burlington	20 00

Best single roadster, 15 hands or over.

1380	Edward Williams, Milwaukee	20 00
1143	R. A. Sullivan, Milwaukee	10 00

CLASS 13—*Sweepstakes.*

JUDGE—J. M. GRIER, Lake Geneva.

Best draft stallion, any age or breed.

No. 82	H. A. Briggs, Elkhorn	$50 00

JUDGE—A. J. EMERTON, Portage.

Best coach stallion, any age or breed.

563	Hadden, Scott & Monat, Janesville	50 00

JUDGE—A. G. HANCOCK, Chicago.

Best standard bred trotting stallion, any age or breed.

980	Fred Pabst, Jr., Milwaukee	50 00

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DEPARTMENT B—CATTLE.

CLASS 14—*Shorthorns.*

JUDGE—S. R. WEBSTER, Danville.

		Best bull 3 years old and over.	
No.	87	H. F. Brown, Minneapolis, Minn.....	$20 00
	1373	Peter Wakem, Madison.....	15 00
		Best bull 2 years old and under 3.	
	87	H. F. Brown, Minneapolis, Minn	15 00
	564	George Harding & Son, Waukesha.....	10 00
		Best bull 1 year old and under 2.	
	87	H. F. Brown, Minneapolis, Minn.....	10 00
	564	George Harding & Son, Waukesha.....	8 00
		Best bull under 1 year old.	
	163	J. N. Chamberlin, Beloit.....	8 00
	1373	Peter Wakem, Madison.....	5 00
		Best cow 3 years old and over.	
	87	H. F. Brown, Minneapolis, Minn...	20 00
	87	H. F. Brown, Minneapolis, Minn.....	15 00
		Best heifer 2 years old and under 3.	
	87	H. F. Brown, Minneapolis, Minn.....	15 00
	87	H. F. Brown, Minneapolis, Minn.....	10 00
		Best heifer 1 year old and under 2.	
	87	H. F. Brown, Minneapolis, Minn.....	10 00
	87	H. F. Brown, Minneapolis, Minn.....	8 00
		Best heifer under 1 year.	
	87	H. F. Brown, Minneapolis, Minn	8 00
	564	George Harding & Son, Waukesha.....	5 00

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AGED HERD.

No. 87	H. F. Brown, Minneapolis, Minn	$40 00
1373	Peter Wakem, Madison	20 00

YOUNG HERD.

87	H. F. Brown, Minneapolis, Minn	40 00
564	Geo. Harding & Son	20 00

Best 2 Shorthorns bred and owned by exhibitor, shown with dam.

163	J. N. Chamberlin, Beloit	25 00

SWEEPSTAKES.

Best cow 2 years old and over.

87	H. F. Brown, Minneapolis, Minn	20 00

Best bull 1 year old and over

87	H. F. Brown, Minneapolis, Minn	20 00

CLASS 15.—*Galloways.*

JUDGE—S. R. WEBSTER, Danville.

Best bull 3 years old and over.

81	David McKay, Fort Wayne, Ind	20 00

Best bull 2 years old and under 3.

81	David McKay, Fort Wayne, Ind	15 00

Best bull under 1 year old and under 2.

81	David McKay, Fort Wayne, Ind	10 00

Best bull under 1 year old.

	David McKay, Fort Wayne, Ind	8 00

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Best cow 3 years old and over.

No. 81 David McKay, Fort Wayne, Ind..... $20 00

Best heifer 2 years old and under 3.

81 David McKay, Fort Wayne, Ind..... 15 00

Best heifer 1 year old and under 2.

81 David McKay, Fort Wayne, Ind..... 10 00

Best heifer under 1 year old.

81 David McKay, Fort Wayne, Ind..... 8 00

AGED HERD.

81 David McKay, Fort Wayne, Ind..... 40 00

YOUNG HERD.

81 David McKay, Fort Wayne, Ind..... 40 00

Best 2 Galloways bred and owned by exhibitor, shown with dam.

81 David McKay, Fort Wayne, Ind..... 25 00

SWEEPSTAKES.

Best cow 2 years old and over.

81 David McKay, Fort Wayne, Ind..... 20 00

Best bull 1 year old and over.

81 David McKay, Fort Wayne, Ind..... 20 00

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CLASS 16—*Herefords.*

JUDGE—S. R. WEBSTER, Danville.

Best bull 3 years old and over.

No. 1046	Rohrer Bros., Mt. Carroll, Ill	$30 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	15 00

Best bull 2 years old and under 3.

161	Thos. Clark, Beecher, Ill	15 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	10 00

Best bull 1 year old and under 2.

411	H. J. Flick, Goodenow, Ill	10 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	8 00

Best bull under 1 year old.

170	Crosgrove Live Stock Co., Le Seuer, Minn	8 00
1046	Rohrer Bros., Mt. Carroll, Ill	5 00

Best cow 3 years old and over.

170	Cosgrove Live Stock Co., Le Seuer, Minn	20 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	15 00

Best heifer 2 years old and under 3.

161	Thos. Clark, Beecher, Ill	15 00
161	Thos. Clark, Beecher, Ill	10 00

Best heifer 1 year old and under 2.

170	Cosgrove Live Stock Co., Le Seuer, Minn	10 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	8 00

Best heifer under 1 year old.

161	Thos. Clark, Beecher, Ill	8 00
411	H. J. Flick, Goodenow, Ill	5 00

AGED HERD.

161	Thos. Clark, Beecher, Ill	40 00
170	Cosgrove Live Stock Co., Le Seuer, Minn	20 00

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YOUNG HERD.

No. 170	Cosgrove Live Stock Co., La Seuer, Minn.....	40 00
1046	Rohrer Bros., Mt. Carroll, Ill	20 00

Best 2 Herfords bred and owned by exhibitor, shown with dam.

161	Thos. Clark, Beecher, Ill.....	25 00

Best 4 Herfords under 4 years old, get of one sire, bred and owned by exhibitor, shown with sire.

170	Cosgrove Live Stock Co., La Seuer, Minn.....	25 00
1046	Rohrer Bros., Mt. Carroll, Ill.....	15 00

SWEEPSTAKES.

Best cow two years old and over.

161	Thos. Clark, Beecher, Ill.....	20 00

Best bull 1 year old and over.

161	Thos. Clark Beecher, Ill.....	20 00

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CLASS 17—*Devons.*

JUDGE—S. R. WEBSTER, Danville.

Best bull 3 years old and over.

No. 1042	E. L. Rawson, South Milwaukee	$20 00
97	A. E. Baker, Beaver Dam	15 00

Best bull 2 years old and under 3.

811	Morse Bros, Verona	15 00
97	A. E. Baker, Beaver Dam	10 00

Best bull 1 year old and under 2.

811	Morse Bros., Verona	10 00
1042	E. L. Rawson, South Milwaukee	8 00

Best bull under 1 year old.

811	Morse Bros., Verona	8 00
97	A. E. Baker, Beaver Dam	5 00

Best cow 3 years old and over.

811	Morse Bros., Verona	20 00
97	A. E. Baker, Beaver Dam	15 00

Best heifer 2 years old and under 3. 15 00

811	Morse Bros., Verona	10 00
1042	E. L. Rawson, South Milwaukee	

Best heifer 1 year old and under 2.

97	A. E Baker, Beaver Dam	10 00
811	Morse Bros, Verona	8 00

Best heifer under 1 year old.

811	Morse Bros., Verona	8 00
811	Morse Bros., Verona	5 00

AGED HERD.

811	Morse Bros., Verona	40 00
1042	E. L. Rawson, South Milwaukee	20 00

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YOUNG HERD.

No.	811	Morse Bros., Verona	$40 00
	97	A. E. Baker, Beaver Dam	20 00

Best 2 Devons bred and owned by exhibitor, shown with dam.

	811	Morse Bros., Verona	25 00

Best 4 Devons under 4 years old, get of one sire, bred and owned by exhibitor, shown with sire.

No.	811	Morse Bros., Verona	$25 00
	97	A. E. Baker, Beaver Dam	15 00

SWEEPSTAKES.

Best cow 2 years and over.

	811	Morse Bros., Verona	20 00

Best bull 1 year and over.

	811	Morse Bros, Verona	20 00

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CLASS 18—*Red Polls.*

JUDGE, S. R. WEBSTER, Danville.

Best 3 year olds and over.

482 J. H. Gilfillan, Marquoketa, Ia..... 20 00

Best bull, 2 years old and under 3.

482 J. H. Gilfillan, Marquoketa, Ia..... 15 00

Best bull, 1 year old and under 2.

483 J. H. Gilfillan, Marquoketa, Ia 10 00

Best bull under 1 year old.

482 J. H. Gilfillan, Marquoketa, Ia..... 8 00

Best cow, 3 years old and over.

481 J. H. Gilfillan, Marquoketa, Ia..... 20 00

Best heifer, 2 years old and under 3.

482 J. H Gilfillan, Marquoketa, Ia..... 15 00

Best heifer, 1 year old and under 2.

482 J. H. Gilfillan, Marquoketa, Ia..... 10 00

Best heifer under 1 year old.

482 J. H. Gilfillan, Marquoketa, Ia..... 8 00

AGED HERD.

482 J. H. Gilfillan, Marquoketa, Ia..... 40 00

YOUNG HERD.

482 J. H. Gilfillan, Marquoketa, Ia..... 40 00

Best two polls bred and owned by exhibitor, shown with dam

482 J. H. Gilfillan, Marquoketa, Ia..... 25 00

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Best 4 Red Polls, either sex, under 4 years old, the get of one sire, bred and owned by exhibitor.

No.	482	J. H. Gilfillan, Marquoketa, Iowa	$25 00

SWEEPSTAKES.

Best cow 2 years old and over.

	482	J. H. Gilfillan, Marquoketa, Iowa	20 00

Best bull 1 year old and over.

	482	J. H. Gilfillan, Marquoketa, Iowa	20 00

CLASS 19.—*Holsteins.*

JUDGE—H. A. PHILLIPS, Sun Prairie.

Best Bull 3 years old and over.

No.	486	Gillett & Son, Rosendale, Wis	$20 00
	486	Gillett & Son, Rosendale, Wis	15 00

Best bull 2 years and under 3.

	1051	Rust Bros., North Greenfield, Wis	15 00
	493	W. C. Gibson, Milwaukee, Wis	10 00

Best bull 1 year old and under 2

	1051	Rust Bros., North Greenfield, Wis	10 00

Best bull under 1 year old.

	486	Gillett & Son, Rosendale, Wis	8 00
	1051	Rust Bros., North Greenfield, Wis	5 00

Best cow 3 years old and over.

	486	Gillett & Son, Rosendale, Wis	20 00
	1051	Rust Bros., North Greenfield, Wis	15 00

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Best heifer 2 years and under 3.

No. 486	Gillett & Son, Rosendale, Wis.....	$15 00
1051	Rust Bros., North Greenfield, Wis.....	10 00

Best heifer 1 year old and under 2.

1051	Rust Bros., North Greenfield, Wis.....	10 00
486	Gillett & Son, Rosendale, Wis.....	8 00

Best heifer under 1 year old.

486	Gillett & Son, Rosendale, Wis.....	8 00
1051	Rust Bros., North Greenfield Wis.....	5 00

AGED HERD.

486	Gillett & Son, Rosendale, Wis.....	40 00
1051	Rust Bros., North Greenfield, Wis.....	20 00

YOUNG HERD.

486	Gillett & Son, Rosendale.....	40 00
1051	Rust Bros., North Greenfield.....	20 00

Best two Holsteins bred and owned by exhibitor, shown with dam.

480	Gillette & Son, Rosendale.....	25 00

Best 4 Holsteins, either sex, under 4 years old, get of one sire bred and owned by exhibitor, shown with sire.

486	Gillett & Son, Rosendale	25 00
1051	Rust Bros, North Greenfield.....	15 00

SWEEPSTAKES.

Best cow 2 years old and over.

486	Gillett & Son, Rosendale.....	20 00

Best bull 1 year old and over.

1051	Rust Bros , North Greenfield	20 00

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CLASS 20.—*Guernseys.*

JUDGE—H. A. PHILLIPS—Sun Prairie.

	Best bull 2 years old over.	
No. 581	Geo. C. Hill & Son, Rosendale	$20 00
1211	F. W. Tratt, Whitewater	15 00
	Best bull 2 years old and under 3.	
1211	F. W. Tratt, Whitewater	15 00
	Best bull 1 year old and under 2.	
1212	F. W. Tratt, Whitewater	10 00
	Best bull under 1 year old.	
581	Geo. C. Hill & Son, Rosendale	8 00
	Best cow 3 years old and over.	
1211	F. W. Tratt, Whitewater	20 00
581	Geo. C. Hill & Son Rosendale	15 06
	Best heifer two years old and under 3.	
1211	F. W. Tratt, Whitewater	15 08
	Best heifer 1 year old and under 2.	
581	Geo. C. Hill & Son, Rosendale	10 00
1211	F. W. Tratt, Whitewater	8 00
	Best heifer under 1 year old.	
1211	F. W. Tratt, Whitewater	8 00
581	Geo. C. Hill & Son	5 00
	AGED HERD.	
1211	F. W. Tratt, Whitewater	40 00
581.	Geo. C. Hill & Son, Rosendale	20 00
	YOUNG HERD.	
1211	F. W. Tratt, Whitewater	40 00
581	Geo. C. Hill, Rosendale	20 90

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Best 2 Guernseys bred and owned by exhibitor, shown with dam.

No. 1211	F. W. Tratt, Whitewater	$25 00

Best 4 Guernseys, either sex, under 4 years old, get of one sire, bred and owned by exhibitor, shown with sire.

581	Geo. C. Hill & Son, Rosendale	25 00

SWEEPSTAKES.

Best cow 2 years old and over.

1211	F. W. Tratt, Whitewater	20 00

Best bull 1 year old and over.

581	Geo. C. Hill & Son, Rosendale	20 00

CLASS 21—*Jerseys.*

JUDGE—H. A. PHILLIPS, Sun Prairie.

Best bull 3 years old and over.

802	McCauley & Brown, Madison	20 00
642	R. S. Kingman, Sparta	15 00

Best bull 2 years old and under 3.

642	R. S. Kingman, Sparta	15 00
802	McCauley & Brown, Madison	10 00

Best bull 1 year old and under 2

802	McCauley & Brown, Madison	10 00
642	R. S Kingman, Sparta	8 00

Best bull under 1 year old.

642	R S. Kingman, Sparta	8 00
481	Greengo & Hinkley, Colgate	5 00

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Best cow 3 years old and over.

No.			
	642	R. S. Kingman, Sparta	$20 00
	802	McCauley & Brown, Madison	15 00

Best heifer 2 years old and under 3.

642	R. S. Kingman, Sparta	15 00
802	McCauley & Brown, Madison	10 00

Best heifer 1 year old and under 2.

802	McCauley & Brown, Madison	10 00
642	R. S. Kingman, Sparta	8 00

Best heifer under 1 year old.

481	Greengo & Hinkley, Colgate	8 00
802	McCauley & Brown, Madison	5 00

AGED HERD.

642	R. S. Kingman, Sparta	40 00
802	McCauley & Brown, Madison	20 00

YOUNG HERD.

802	McCauley & Brown, Madison	40 00
642	R. S. Kingman, Sparta	20 00

Best 2 Jerseys, bred and owned by exhibitor, shown with dam.

802	McCauley & Brown, Madison	25 00

Best 4 Jerseys, either sex, under 4 years old, get of one sire, bred and owned by exhibitor, shown with sire.

642	R. S Kingman, Sparta	25 00
802	McCauley & Brown, Madison	15 00

SWEEPSTAKES.

Best cow, two years old and over.

642	R. S. Kingman, Sparta	20 00

Best bull, 1 year old and over.

642	R. S. Kingman, Sparta	20 00

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CLASS 22—*Brown Swiss.*

JUDGE—S. R. WEBSTER, Danville.

Best bull 2 years old and under 3.

No. 602 T. H. Inman, Hanover $15 00

Best bull 1 year old and under 2.

602 T. H. Inman, Hanover 10 00

Best bull under 1 year old.

602 T. H. Inman, Hanover 8 00

Best cow 3 years old and over.

602 T. H. Inman, Hanover 20 00

Best heifer 2 years old and under 3.

602 T. H. Inman, Hanover 15 00

Best heifer 1 year old and under 2.

602 T. H. Inman, Hanover 10 00

Best heifer under one year old.

602 T. H. Inman, Hanover 8 00

YOUNG HERD.

602 T. H. Inman, Hanover 40 00

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CLASS 24.—*Herds and Specials.*

JUDGES—S. R. WEBSTER, Danville; H. A. PHILLIPS, Sun Prairie; GEO. MCKERROW, Sussex.

Best beef herd.

No. 87 H. F. Brown, Minneapolis, Minn..... .... Diploma.

Best Dairy Herd.

1211 F. W. Tratt, Whitewater.... ..... Diploma.

MILK TEST—SWEEPSTAKES.

Best milk cow, any breed, 3 years old and over, tested on fair grounds.

1051 Rust Bros., North Greenfield..... ... . Diploma.

American Hereford Cattle Breeders' Association's Special Premiums.

HEREFORD BULLS.

Best bull 3 years old or over.

No. 170 Cosgrove Live Stock Co., La Suer, Minn..... $6,00

Best bull 2 years old and under 3.

161 Thos. Clark, Beecher, Ill..... ..... 6 00
170 Cosgrove Live Stock Co., La Seuer, Minn..... 4 00

Best bull 1 year old and under 2,

411 H. J. Flick, Goodenow, Ill 6 00
170 Cosgrove Live Stock Co., Lo Seuer, Minn..... 4 00

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Best bull under 1 year old.

No.	170	Cosgrove Live Stock Co., La Seuer, Minn.....	$3 00

Best female 3 years old and over.

	170	Cosgrove Live Stock Co., La Seuer, Minn.....	6 00
	170	Cosgrove Live Stock Co., La Seuer, Minn.....	4 00

Best female 2 years old and under 3.

No.	161	Thos. Clark, Beecher, Ill.....	6 00
	161	Thos. Clark, Beecher, Ill.....	4 00

Best female 1 year old and under 2.

	170	Cosgrove Live Stock Co., La Seuer, Minn.....	6 00
	170	Cosgrove Live Stock Co., La Seuer, Minn.....	4 00

Best female under 1 year old.

	161	Thos. Clark, Beecher, Ill	3 00
	411	H. J. Flick, Goodenow, Ill.....	2 00

Best Hereford steer 2 years old and under 3.

	411	H. J. Flick, Goodenow, Ill.....	10 00

Best Hereford steer 1 year old and under 2.

	411	H. J. Flick, Goodenow, Ill.....	10 00

Best Hereford steer under 1 year old.

	441	H. J. Flick, Goodenow, Ill.....	10 00

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DEPARTMENT C—SHEEP.

CLASS 25—*American Merinos.*

JUDGE—J. D. BAKER

Best ram 2 years old and over.

No.			
	253	J. H. Dixon, Brandon	$10 00
	964	J. H. Pitcher, Eagle	8 00
	604	D. B. Jones, Weiner	4 00

Best ram 1 year old and under 2.

964	J. H. Pitcher, Eagle	10 00
604	D. B. Jones, Weiner	7 00
253	J. H. Dixon, Brandon	3 00

Best ram lamb.

604	D. B. Jones, Weiner	10 00
964	J. H. Pitcher, Eagle	7 00
253	J. H. Dixon, Brandon	2 00

Best ewe 2 years old and over.

604	D. B. Jones, Weiner	10 00
964	J. H. Pitcher, Eagle	8 00
253	J. H. Dixon, Brandon	4 00

Best ewe 1 year old and under 2.

964	J. H. Pitcher, Eagle	10 00
604	D. B. Jones, Weiner	7 00
964	J. H. Pitcher, Eagle	3 00

Best ewe lamb.

604	D. B. Jones, Weiner	10 00
253	J. H. Dixon, Brandon	7 00
604	D. B. Jones, Weiner	2 00

Best ram and 5 ewes, any age.

964	J. H. Pitcher, Eagle	10 00

Best ram and 5 of his get bred by exhibitor.

964	J. H. Pitcher, Eagle	Diploma.

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CLASS 26—*Oxfords*.

JUDGE—WM. RHODES.

Best ram, 2 years old and over.

No. 807 Geo. McKerrow, Sussex..... $10 00

Best ram 1 year-old and under 2.

807 Geo. McKerrow, Sussex..... 10 00

Best ram lamb.

807 Geo. McKerrow, Sussex..... 10 00

Best ewe 2 years old and over.

807 Geo. McKerrow, Sussex 10 00

Best ewe 1 year old and under 2.

807 Geo. McKerrow, Sussex..... 10 00

Best ewe lamb.

807 Geo. McKerrow, Sussex... ..... 10 00

Best ram and 5 ewes, any age.

807 Geo. McKerrow, Sussex..... 10 00

Best ram and 5 of his ~~get~~—bred by exhibitor.

807 Geo. McKerrow, Sussex.... ..... Diploma.

HAMPSHIRE DOWNS.

JUDGE—WM. RHODES.

Best ram 2 years old and over.

884 National Shire and Hackney Horse Co., Neillsville.... 10 00

Best ram 1 year old and under 2.

884 National Shire and Hackney Horse Co., Neillsville.... 10 00

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Best ram lamb.

No.			
	884	National Shire and Hackney Horse Co., Neillsville....	$10 00

Best ewe lamb 2 years old and over.

	884	Nat. Shire and Hackney Horse Co., Neillsville.....	10 00

Best ewe lamb.

	884	Nat. Shire and Hackney Horse Co., Neillsville.....	10 00

Best ram and 5 ewes, any age.

	884	Nat. Shire and Hackney Horse Co., Neillsville.....	10 00

CLASS 27—*Cotswolds.*

JUDGE—WM. RHODES.

Best ram 2 years old and over.

No.			
	565	Frank Harding, Waukesha	$10 00
	565	Frank Harding, Waukesha.....	8 00
	485	Geo. W. Groesbeck, Elkhorn.....	4 00

Best ram 1 year old and under 2.

	565	Frank Harding, Waukesha	10 00
	565	Frank Harding, Waukesha.....	7 00
	565	Frank Harding, Waukesha.....	3 00

Best ram lambs.

	565	Frank Harding, Waukesha.....	10 00
	565	Frank Harding, Waukesha.....	7 00
	565	Frank Harding, Waukesha.....	2 00

Best ewe 2 years old and over.

	565	Frank Harding, Waukesha.....	10 00
	565	Frank Harding, Waukesha.....	2 00
	565	Geo. W. Groesbeck, Elkhorn.....	4 00

Best ewe 1 year old and under 2.

	565	Frank Harding, Waukesha	10 00
	565	Frank Harding, Waukesha.....	7 00
	565	Frank Harding, Waukesha.....	3 00

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Best ewe lamb.

No.			
	565	Frank Harding, Waukesha	$10 00
	565	Frank Harding, Waukesha	7 00
	565	Frank Harding, Waukesha	2 00

Best ram and 5 ewes, any age.

	565	Frank Harding, Waukesha	10 00

Best ram and 5 of his get bred by exhibitor.

	565	Frank Harding, Waukesha	Diploma.

CLASS 28—*South Downs.*

JUDGE—WM. RHODES.

Best ram 2 years old and over.

No.			
	807	Geo. McKerrow, Sussex	$10 00

Best ram 1 year old and under 2.

	807	Geo. McKerrow, Sussex	10 00

Best ram lamb.

	807	Geo. McKerrow, Sussex	10 00

Best ewe 2 years old and over.

	807	Geo. McKerrow, Sussex	10 00

Best ewe 1 year old and under 2.

	807	Geo. McKerrow, Sussex	10 00

Best ewe lamb.

	807	Geo. McKerrow, Sussex	10 00

Best ram and 5 ewes, any age.

	807	Geo. McKerrow, Sussex	10 00

Best ram with 5 of his get, bred by exhibitor

	807	Geo. McKerrow, Sussex	Diploma.

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CLASS 29—*Shropshires.*

JUDGE—WM. RHODES.

Best ram 2 years old and over.

No.			
	7	Geo. Allen and Sons, Allerton, Ill	$10 00
	401	A. O. Fox, Oregon	8 00
	401	A. O. Fox, Oregon	4 00

Best ram 1 year old and under 2.

	7	Geo. Allen and Sons, Allerton, Ill	10 00
	7	A. O. Fox, Oregon	7 00
	401	A. O. Fox, Oregon	3 00

Best ram lamb.

	7	Geo. Allen and Sons, Allerton, Ill	10 00
	401	A. O. Fox, Oregon	7 00
	7	Geo. Allen and Sons, Allerton, Ill	2 00

Best ewe 2 years old and over.

	7	Geo. Allen and Sons, Allerton, Ill	10 00
	7	Geo. Allen and Sons, Allerton, Ill	8 00
	7	Geo. Allen and Sons, Allerton, Ill	4 00

Best ewe 1 year old and under 2.

	7	Geo. Allen and Sons, Allerton, Ill	10 00
	401	A. O. Fox, Oregon	7 00
	7	Geo. Allen and Sons, Allerton, Ill	3 00

Best ewe lamb.

	7	Geo. Allen and Sons, Allerton, Ill	10 00
	7	Geo. Allen and Sons, Allerton, Ill	7 00
	401	A. O. Fox, Oregon	2 00

Best ram and 5 ewes, any age.

	7	Geo. Allen and Sons, Allerton, Ill	10 00

Best ram and 5 of his get, bred by exhibitor.

	401	A. O. Fox, Oregon	Diploma.

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CLASS 30—*Registered Merinos other than American.*

JUDGE—J. D. BAKER.

Best ram 2 years old and over.

No. 241 David & Benedict, Woodworth... ..... $10 00

Best ram 1 year old and under 2.

241 Davis & Benedict, Woodworth..... 10 00

Best ram lamb.

241 Davis & Benedict, Woodworth..... 10 00

Best ewe 2 years old and over.

241 Davis & Benedict, Woodworth 10 00

Best ewe 1 year old and under 2.

241 Davis & Benedict, Woodworth 10 00

Best ewe lamb.

241 Davis & Benedict, Woodworth. 10 00

Best ram and 5 ewes, any age.

241 Davis & Benedict, Woodworth..... ..... 10 00

CLASS 31—*Lincolns and Leicesters.*

JUDGE—WILLIAM RHODES.

Best ram, 2 years old and over.

No. 565 Frank Harding $10 00
813 Harvey Marr, Whitewater..... ..... 8 00

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Best ram, 1 year old and under 2.

No.			
	813	Harvey Marr, Whitewater	$10 00
	565	Frank Harding, Waukesha	7 00

Best ram lamb.

	565	Frank Harding, Waukesha	10 00
	813	Harvey Marr, Whitewater	7 00
	813	Harvey Marr, Whitewater	2 00

Best ewe, 2 years old and over.

	499	D. C. Graham, Cameron, Ill	10 00
	565	Frank Harding, Wau esha	8 00
	565	Frank Harding, Waukesha	4 00

Best ewe, 1 year old and under 2.

	565	Frenk Harding, Waukesha	10 00
	565	Frank Harding, Waukesha	7 00
	813	Harvey Marr, Whitewater	3 00

Best ewe lamb.

	565	Frank Harding, Wauke ha	10 00
	565	Frank Harding, Waukesha	7 00
	813	Harvey Marr, Whitewater	2 00

Best ram and 5 ewes, any age.

	565	Frank Harding, Waukesha	10 00

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DEPARTMENT D.—SWINE.

JUDGE—CHARLES LAWRENCE, Danville.

CLASS 32—*Poland Chinas.*

	Best boar 2 years old and over.	
No. 485	Geo. W. Groesbeck, Elkhorn	$15 00
1041	C. W. Rowe, Whitewater	7 00
	Best boar 1 year old and over.	
1373	Peter Wakem, Madison	12 00
601	W. A. Jones, Mineral Point	6 00
	Best breeding sow 2 years old and over.	
1373	Peter Wakem, Madison	15 00
1041	C. W. Rowe, Whitewater	7 00
	Best breeding sow 1 year old and under 2.	
1041	C. W. Rowe, Whitewater	12 00
1041	C. W. Rowe, Whitewater	6 00
	Best breeding sow with litter of pigs.	
601	W. A. Jones, Mineral Point	15 00
1373	Peter Wakem, Madison,	7 00
	Best boar pig over 6 months and under 1 year old.	
4	Frank Austerman, Waukesha	8 00
1372	J. F. Wegge, Burlington	4 00
	Best sow pig over 6 months and under 1 year old.	
1045	Gustav Schwemer, Root Creek	8 00
1372	J. F. Wegge, Burlington	4 00
	Best boar pig under 6 months old.	
1041	C. W. Rowe, Whitewater	6 00
601	W. A. Jones, Mineral Point	3 00
	Best sow pig under 6 months old.	
601	W. A. Jones, Mineral Point	6 00
1373	Peter Wakem, Madison	3 00

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SWINE BREEDERS' SPECIAL.

Best boar pig under 6 months old.

No. 1041	C. W. Rowe, Whitewater	$5 00

SWEEPSTAKES.

Best boar any age.

1041	C. W. Rowe, Whitewater	15 00

Best sow any age.

1373	Peter Wakem, Madison	15 00

Best boar and 4 of his get, under 1 year old, bred and owned by exhibitor.

601	W. A. Jones, Mineral Point	15 00

CLASS 33—*Chester Whites and Jersey Reds.*

Best boar 2 years old and over.

No. 963	Palmer and Noblet, Springfield	$15 00
408	Jacob Finger, Milwaukee	7 00

Best boar 1 year old and under 2.

963	Palmer and Noblet, Springfield	12 00
408	Jacob Finger, Milwaukee	6 00

Best breeding sow 2 years old and over.

963	Palmer and Noblet, Springfield	15 00
408	Jacob Finger, Milwaukee	7 00

Best breeding sow 1 year old and under 2.

963	Palmer and Noblet, Springfield	12 00
408	Jacob Finger, Milwaukee	6 00

Best breeding sow with litter of pigs.

963	Palmer and Noblet, Springfield	15 00
408	Jacob Finger, Milwaukee	7 00

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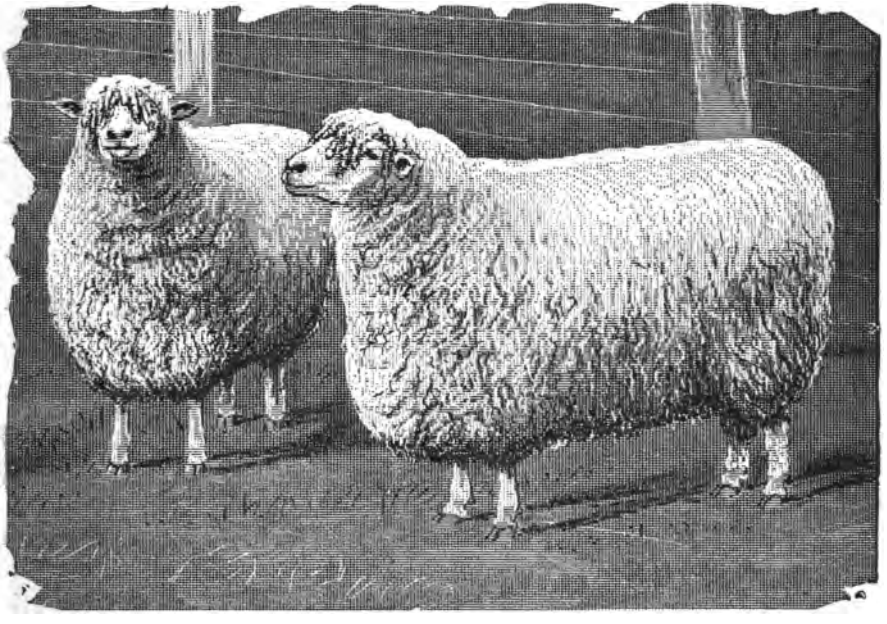

Pair prize-winning Cotswolds, owned by Geo. Harding & Son, Waukesha, Wis.

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Best boar pig over 6 months and under 1 year old.

No.			
	963	Palmer and Noblet, Springfield	$8 00
	963	Palmer and Noblet, Springfield	4 00

Best sow pig over 6 months and under 1 year old.

	408	Jacob Finger, Milwaukee	8 00
	963	Palmer and Noblet, Springfield	4 00

Best boar pig under 6 months old.

	963	Palmer and Noblet, Springfield	6 00
	963	Palmer and Noblet, Springfield	3 00

Best sow pig under 6 months old.

	963	Palmer & Noblet, Springfield	6 00
	408	Jacob Finger, Milwaukee	3 00

SWINE BREEDERS' SPECIAL.

Best boar pig under 6 months old.

	963	Palmer & Noblet, Springfield	5 00

SWEEPSTAKES.

Best boar, any age.

	963	Palmer & Noblet, Springfield	15 00

Best sow, any age.

	963	Palmer & Noblet, Springfield	15 00

Best boar and 4 of his get, under 1 year old, bred and owned by exhibitor.

	963	Palmer & Noblet, Springfield	15 00

CLASS 34—*Berkshires.*

Best boar, 2 years old and over.

No.	1373	Peter Wakem, Madison	$15 00

Best boar, 1 year old and under 2.

	725	Lovejoy & Son, Roscoe, Ill	15 00

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Best breeding sow, 2 years old and over.

No. 725	Lovejoy & Son. Roscoe, Ill	$15 00
725	Lovejoy & Son. Roscoe, Ill	7 00

Best breeding sow, 1 year old and under 2

725	Lovejoy & Son, Roscoe, Ill	12 00
601	W. A. Jones, Mineral Point	6 00

Best breeding sow with litter of pigs.

1373	Peter Wakem, Madison	15 00

Best boar over 6 months and under 1 year.

725	Lovejoy & Son, Roscoe Ill	8 00
725	Lovejoy & Son, Roscoe, Ill	4 00

Best sow over 6 months and under 1 year old.

725	Lovejoy & Son, Roscoe, Ill	8 00
725	Lovejoy & Son, Roscoe, Ill	4 00

Best boar pig under 6 months old.

601	W. A. Jones, Mineral Point	6 00
725	Lovejoy & Son, Roscoe, Ill	3 00

Best sow pig under 6 months old.

725	Lovejoy & Son, Roscoe. Ill	6 00
725	Lovejoy & Son, Roscoe, Ill	3 00

SWINE BREEDERS' SPECIAL

Best boar pig under 6 months old.

725	Lovejoy and Son, Roscoe, Ill	5 00

SWEEPSTAKES.

Best boar any age.

725	Lovejoy and Son, Roscoe, Ill	15 00

Best sow any age.

725	Lovejoy and Son, Roscoe. Ill	15 00

Best boar and 4 of his get under 1 year old, bred and owned by exhibitor.

1373	Peter Wakem, Madison	15 00

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CLASS 35—*Essex, Small Yorkshires and Cheshires.*

Best boar 1 year old and under 2.

No. 807 George McKerrow, Sussex..... $12 00

Best breeding sow 2 years old and over.

807 George McKerrow, Sussex..... 15 00

Best breeding sow 1 year old and under 2.

807 George McKerrow, Sussex..... 12 00

Best breeding sow with litter of pigs.

807 George McKerrow, Sussex..... 15 00

Best boar over 6 months and under 1 year.

807 George McKerrow, Sussex..... 8 00

Best boar pig under 6 months old.

807 George McKerrow, Sussex..... 6 00

Best sow pig under 6 months.

807 George McKerrow, Sussex..... 6 00

SWINE BREEDERS' SPECIAL.

807 George McKerrow, Sussex..... 5 00

SWEEPSTAKES.

Boar any age.

807 George McKerrow, Sussex..... 15 00

Sow, any age.

807 George McKerrow, Sussex..... 15 00

Best boar and 4 of his get, under 1 year old, bred and owned by exhibitor.

807 George McKerrow, Sussex..... 15 00

Digitized by Google

CLASS 36—*Victorias.*

Best boar 2 years old and over.

No. 241	Davis & Benedict, Woodworth		$15 00

Best boar 1 year old and under 2.

573	Chas. T. Hill, Brookfield	12 00
241	Davis & Benedict, Woodworth	6 00

Best breeding sow 2 years old and over.

241	Davis & Benedict, Woodworth	15 00
241	Davis & Benedict, Woodworth	7 00

Best breeding sow 1 year old and under 2.

241	Davis & Benedict, Woodworth	12 00
241	Davis & Benedict, Woodworth	6 00

Best breeding sow with litter of pigs.

241	Davis & Benedict, Woodworth	15 00
241	Davis & Benedict, Woodworth	7 00

Best boar over 6 months and under 1 year old.

241	Davis & Benedict, Woodworth	8 00
241	Davis & Benedict, Woodworth	4 00

Best sow over 6 months and under 1 year old.

241	Davis & Benedict, Woodworth	8 00
241	Davis & Benedict, Woodworth	4 00

Best boar pig under 6 months old.

1377	R. D. Warner, Whitewater	6 00
573	Chas. T. Hill, Brookfield	3 00

Best sow pig under six months old

241	Davis & Benedict, Woodworth	6 00
573	Chas. T. Hill, Brookfield	3 00

SWINE BREEDERS' SPECIAL.

Best boar pig under 6 months old.

1377	R. D. Warner, Whitewater	5 00

Digitized by Google

SWEEPSTAKES.

Best boar any age.

No.	241	Davis and Benedict, Woodworth	$15 00

Best sow any age.

	241	Davis and Benedict, Woodworth	15 00

Best boar and 4 of his get under 1 year old, bred and owned by exhibitor.

	241	Davis and Benedict, Woodworth	15 00

DEPARTMENT E—POULTRY.

JUDGE—E. S. CUMMINGS.

ASIATICS.

Best pair of light Brahma fowls.

No.	1044	E. G. Roberts, Ft. Atkinson	3 00
	728	J. R. Love, Waukesha	2 00

Best pair light Brahma chicks.

	728	J. R. Love, Waukesha	3 00
	728	J. R. Love, Waukesha	2 00

Best pair dark Brahma fowls.

	96	J. R. Brabazon, Delevan	3 00
	1877	R. D. Warner, Whitewater	2 00

Best pair dark Brahma chicks.

	96	J. R. Brabazon, Delavan	3 00
	728	J. R. Love, Whitewater	2 00

Best pair Buff Cochin fowls.

	96	J. R. Brabazon, Delavan	3 00
	96	J. R. Brabazon, Delavan	2 00

Digitized by Google

Best pair Buff Cochin chicks.

No.			
	93	J. R. Brabazon, Delavan	$3 00
	1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair Partridge Cochin fowls.

96	J. R. Brabazon, Delavan	3 00
728	J. R. Love, Waukesha	2 00

Best pair Partridge Cochin chicks.

96	J. R. Brabazon, Delavan	3 00
728	J. R. Love, Waukesha	2 00

Best pair White Cochin Fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Barbazon, Delavan	2 00

Best pair White Cochin Chicks.

96	J. R. Brabazon, Delavan	3 00

Best pair Black Cochin Fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair Black Cochin Chicks

96	J. R. Brabazon, Delavan	3 00

Best pair Langshan Fowls.

1877	R. D. Warner, Whitewater	3 00
963	Palmer and Noblet, Springfield	2 00

Best pair Langshan Chicks.

963	Palmer and Noblet, Springfield	3 00
96	J. R. Brabazon, Delavan	2 00

Best display of Asiatics.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

AMERICANS.

Best pair American Dominique fowls.

No.			
	96	J. R. Brabazon, Delavan	$3 00

Best pair American Dominique chicks.

96	J. R. Brabazon, Delavan	3 00

Digitized by Google

Best pair barred Plymouth Rock fowls.

No. 1044	E. G. Roberts, Ft. Atkinson	$3 00
1377	R. D. Warner, Whitewater	2 00

Best pair barred Plymouth Rock chicks.

963	Palmer and Noblet, Springfield	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair white Plymouth Rock fowls.

728	J. R. Love, Waukesha	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair white Plymouth Rock chicks.

96	J. R. Brabazon, Delavan	3 00
963	Palmer and Noblet, Springfield	2 00

Best pair Wyandotte fowls.

963	Palmer and Noblet, Springfield	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair Wyandotte chicks.

963	Palmer and Noblet, Springfield	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair white Wyandotte fowls.

243	G. DeYelleke, Milwaukee	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair white Wyandotte chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00
963	Palmer and Noblet, Springfield	2 00

Best pair Golden Wyandotte fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R Brabazon Delavan	2 00

Best pair Golden Wyandotte chicks.

728	J. R. Love, Waukesha	3 00

Best display Americans.

1044	E. G. Roberts, Ft. Atkinson	10 00
96	J. R. Brabazon, Delavan	5 00

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ENGLISH.

Best pair White Dorking fowls.

No.	96	J. R. Brabazon, Delavan	$3 00

Best pair White Dorking chicks.

96	J. R. Brabazon, Delavan	3 00

Best pair colored or silver grey Dorking fowls.

96.	J. R. Brabazon, Delavan	3 00

Best pair colored or silver grey Dorking chicks.

96	J. R. Brabazon, Delavan	3 00

FRENCH.

Best pair Houdan fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00

Best pair Houdan chicks.

1442	Yorgey & Rich, Horicon	3 00
96	J. R. Brabazon, Delavan	2 00

POLISH.

Best pair Black Polish (white crested) fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair Black Polish (white crested) chicks.

96	J. R. Brabazon, Delavan	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair White Polish fowls.

1377	R. D. Warner, Whitewater	3 00

Best pair Silver Polish fowls.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair Silver Polish chicks.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Digitized by Google

Best pair Golden Polish fowls.

No.	96	J. R. Brabazon, Delavan	$3 00
	728	J. R. Love, Waukesha	2 00

Best pair Golden Polish chicks.

728	J. R. Love, Waukesha	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

GAMES.

Best pair brown red fowls.

No. 1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair brown red chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00

Best pair B. B. R. Game fowls.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair B. B. R. Game chicks.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair Pyle chicks.

96	J. R. Brabazon, Delavan	3 00

Best pair Game fowls any other variety.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Askinson	2 00

Best pair Game chicks any other variety.

96	J. R. Brabazon, Delavan	3 00
1377	R. D. Warner, Whitewater	2 00

HAMBURGS.

Best pair black Hamburg fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00

Best pair black Hamburg chicks.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Digitized by Google

Best pair silver spangled Hamburg fowls.

No. 1042	Yorgey & Rich, Horicon	$3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair silver spangled Hamburg chicks.

1042	Yorgey & Rich, Horicon	3 00
1042	Yorgey & Rich, Horicon	2 00

Best pair golden spangled Hamburg fowls.

96	J. R. Brabazon, Delavan	3 00
728	J. R. Love. Waukesha	2 00

SPANISH AND LEGHORNS.

Best pair black Spanish fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair black Spanish chicks.

1377	R. D. Warner, Whitewater	3 00

Best pair white Leghorn fowls.

1377	R. D. Warner, Whitewater	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair white Leghorn chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair brown Leghorn fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
963	Palmer and Noblet, Springfield	2 00

Best pair of brown Leghorn chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair rose combed white Leghorn fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair rose combed white Leghorn chicks.

1044	E G. Roberts, Ft. Atkinson	3 00
1377	R. D. Warner, Whitewater	2 00

Digitized by Google

Best pair rose combed brown Leghorn fowls.

No. 1044	E. G. Roberts, Ft. Atkinson	$3 00

Best pair rose combed brown Leghorn chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R Brabazon, Delavan	2 00

BANTAMS.

Best pair Golden Seabright fowls.

1377	R. D. Warner, Whitewater	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair Golden Seabright chicks.

96	J. R. Brabazon, Delavan	3 00
728	J. R. Love, Waukesha	2 00

Best pair Silver Duckwing fowls.

1377	R. D. Warner, Whitewater	3 00
728	J. R. Love, Waukesha	2 00

Best pair Silver Duckwing chicks.

96	J. R. Brabazon, Delavan	3 00
1377	R. D. Warner, Whttewater	2 00

Best pair B. B. R. Game fowls.

1044	E. G. Roberts, Ft. Atkinson	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair B. B. R. Game chicks.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair any other variety Bantam fowls.

1044	E. G. Roberts, Ft. Atkinson.	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair any other variety Bantam chicks.

1377	R. D. Warner, Whitewater	3 00
96	J. R. Brabazon, Delavan	2 00

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TURKEYS.

Best pair bronze turkey fowls.

No. 96	J. R. Brabazon, Delavan	$3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair turkey chicks.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R Brabazon, Delavan	2 00

Best pair white Holland turkey fowls

1044	E. G. Roberts, Ft. Atkinson	3 00
95	J. R. Brabazon, Delavan	2 00

Best pair white Holland turky chicks,

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair white turkey fowls.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

WATER FOWLS.

Best pair Toulouse geese.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair Emden geese.

1044	E. G. Roberts, Ft. Atkinson	3 00
95	J. R. Brabazon, Delavan	2 00

Best pair China geese.

1044	E. G. Roberts, Ft. Atkinson	3 00
96	J. R. Brabazon, Delavan	2 00

Best pair Pekin ducks.

1044	E. G. Roberts, Ft. Atkinson	3 00
963	Palmer & Noblet, Springfield	2 00

Best pair Aylesbury ducks.

728	J. R. Love, Waukesha	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

Best pair Rouen ducks.

963	Palmer & Noblet, Springfield	3 00
728	J. R. Love, Waukesha	2 00

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Best pair Muscovy ducks.

No. □96	J. R. Brabazon, Delavan	$3 00
1377	R. D. Warner, Whitewater	2 00

Best pair Cayuga ducks.

728	J. R. Love, Waukesha	3 00
96	J. R. Brabazon, Delavan	2 00

PEA FOWLS.

Best pair pea fowls.

96	J. R. Brabazon, Delavan	3 00
1044	E. G. Roberts, Ft. Atkinson	2 00

PIGEONS.

Best Barbs, any color.

724	A. J. Luebke, Milwaukee	1 00
724	A. J. Luebke, Milwaukee	50

Best Fantails, any variety or color.

724	A. J. Luebke, Milwaukee	1 00

HOMERS.

Best show Homers.

1126	Schuenke & Luebke, Milwaukee	1 00
724	A. J. Luebke, Milwankee	50

Bird having best 100 miles.

1126	Schuenke & Luebke, Milwaukee	1 00
1126	Schuenke & Luebke, Milwaukee	50

Bird having best long distance record.

724	A. J. Luebke, Milwaukee	1 00

Best Jacobins, any color.

724	A. J. Luebke, Milwaukee	1 0

Best Moorheads, any color.

724	A. J. Luebke, Milwaukee	1 00

Best Owls, any color.

724	A. J. Luebke, Milwaukee	1 00

Digitized by Google

Best Nuns, any color.

No.	724	A. J. Luebke, Milwaukee	$1 00

Best Starlings, any color

	724	A. J. Luebke, Milwaukee	1 00
	724	A. J. Luebke, Milwaukee	50

Best Swallows, any color.

	724	A. J. Luebke, Milwaukee	1 00

Best Trumpeters, any variety or color.

	724	A. J. Luebke, Milwaukee	1 00

Tumblers, any variety or color.

	724	A. J. Luebke, Milwaukee	1 00

Best Carriers, any color.

	724	A. J. Luebke, Milwaukee	1 00

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DEPARTMENT F.—AGRICULTURE.

CLASS 38.—*Field Products.*

JUDGE—S. A. PELTON, Reedsburg.

Best spring wheat, Rio Grande or China Tea.

No. 1378	Mark West, Elkhorn	$5 00
723	J. C. Loomis, Alma Center	3 00

Best spring wheat, Fife.

1365	H. P. West, Fayetteville	5 00
1378	Mark West, Elkhorn	3 00

Best spring wheat, Blue Stem.

1365	H. P. West, Fayetteville	5 00
973	J. H. Pilgrim, Wauwatosa	3 00

Best spring wheat, any other variety.

1378	Mark West, Elkhorn	5 00
1365	H. P. West, Fayetteville	3 00

Best white winter wheat.

490	Nelson Greengo, Colgate	5 00
1365	H. P. West, Fayetteville	3 00

Best red winter wheat.

572	J. S. Hall, North Freedom	5 00
1131	M. E. Spring, Paraboo	3 00

Best rye.

572	J. S. Hall, North Freedom	5 00
1365	H. P. West, Fayetteville	3 00

Best oats.

1365	H. P. West, Fayetteville	5 00
1378	Mark West, Elkhorn	3 00

Best white oats.

1378	Mark West, Elkhorn	
410	C. J. Fraser, Vernon	

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Best barley.

No. 974	D. T. Pilgrim, Wauwatosa	$5 00
973	J. H. Pilgrim, Wauwatosa	3 00

Best scotch barley.

973	J. H. Pilgrim, Wauwatosa	5 00
1378	Mark West, Elkhorn	3 00

Best buckwheat.

1365	H. P. West, Fayetteville	5 00
1365	H. P. West, Fayetteville	3 00

Best flax seed.

1365	H. P. West, Fayetteville	5 00
973	J. H. Pilgrim, Wauwatosa	3 00

Best timothy seed.

1365	H. P. West, Fayetteville	5 00
723	J. C. Loomis, Alma Center	3 00

Best clover seed.

973	J. H. Pilgrim, Wauwatosa	5 00
1146	Moses Stephenson, Waldwick	3 00

Best red top.

1365	H. P. West, Fayetteville	3 00

Best Hungarian millet.

1365	H. P. West, Fayetteville	3 00

Best millet, any other variety.

973	J. H. Pilgrim, Wauwatosa	3 00

Best field peas.

490	Nelson Greengo, Colgate	3 00

Best peas, any other variety.

400	C. J. Frazer, Vernon	3 00
1365	H. P. West, Fayetteville	2 00

Best Navy beans.

723	J. C. Loomis, Alma Center	5 00
1378	Mark West, Elkhorn	3 00

Digitized by Google

Best beans, any other variety.

No. 1365	H. P. West, Fayetteville	5 00
572	J. S. Hall, North Freedom	3 00

Best Dent corn—yellow.

1378	Mark West, Elkhorn	5 00
1365	H. P. West, Fayetteville	3 00

Best Flint corn—yellow.

723	J. C. Loomis, Alma Center	5 00
1365	H. P. West, Fayetteville	3 00

Best Flint corn—white.

1365	H. P. West, Fayetteville	5 00

Best bushel of corn in the ear, any variety.

1365	H. P. West, Fayetteville	5 00
163	J. N. Chamberlin, Beloit	3 00

Best six pumpkins.

487	John Grape, Waukesha	3 00
1369	C. Wynoble, St. Francis	2 00

Best display of grain on straw or stalk.

1365	H. P. West, Fayetteville	5 00
723	J. C. Loomis, Alma Center	3 00

Best exhibit field products.

1365	H. P. West, Fayetteville	20 00
1378	Mark West, Elkhorn	10 00

CLASS 39—*Garden Products.*

JUDGE—JOHN DEY, Hortonville.

Best Early Rose or Early Ohio potatoes.

No. 723	J. C. Loomis, Alma Center	$3 00
410	C. J. Fraser, Vernon	2 00

Best Beauty of Hebron potatoes.

922	L. L. Olds, Clinton	3 00
723	J. C. Loomis, Alma Center	2 00

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Best other variety of early potatoes.

No. 922	L. L. Olds, Clinton	$3 00
1369	C. Wynoble, St. Francis	2 00

Best Snow Flake potatoes.

922	L. L. Olds, Clinton	3 00
723	J. C. Loomis, Alma Center	2 00

Best Burbank seedling potatoes.

1369	C. Wynoble, St. Francis	3 00
723	J. C. Loomis, Alma Center	2 00

Best other variety of late potatoes.

922	L. L. Olds, Clinton	3 00
723	J. C. Loomis, Alma Center	2 00

Best and largest show of potatoes.

922	L. L. Olds, Clinton	5 00
723	J. C. Ames, Alma Center	2 00

Best Sweet potatoes.

1385	H. P. West, Fayetteville	3 00

Best Lima beans.

1365	H. P. West, Fayetteville	3 00
487	John Grape, Waukesha	2 00

Best Turnip beets.

1369	C. Wynoble, St. Francis	$3 00
410	C. J. Fraser, Vernon	2 00

Best Long Blood beets.

1369	C. Wynoble, St. Francis	3 00

Best mangelwurtzel.

487	John Grape, Waukesha	3 00
414	M. C. Foley, Wauwatosa	2 00

Best Red Wethersfiield onions

1369	C. Wynoble, St. Francis	3 00
487	John Grape, Waukesha	2 00

Best Yellow Danvers onions.

487	John Grape, Waukesha	3 00
1367	C. Wynoble, St. Francis	2 00

Digitized by Google

Best White onions.

No.			
487	John Grape, Waukesha	$3 00
1369	C. Wynoble, St. Francis	2 00

Best Drumhead cabbage.

1369	C. Wynoble, St. Francis	3 00

Best 3 cabbages other variety.

1369	C. Wynoble, St. Francis	3 00
487	John Grape, Waukesha	2 00

Best Long Orange carrots.

1360	C. Wynoble, St. Francis	3 00
410	C. J. Fraser, Vernon	2 00

Best Horn carrots.

1369	C. Wynoble, St. Francis	3 00
410	C. J. Fraser, Vernon	2 00

Best head of cauliflower.

487	John Grape, Waukesha	3 00

Best 10 heads celery.

487	John Grape, Waukesha	3 00

Best 12 ears early sweet corn.

974	D. T. Pilgrim, Wauwatosa	3 00
410	C. J. Fraser, Vernon	2 00

Best 6 egg plants.

487	John Grape, Waukesha	2 00

Best 6 watermelons.

487	John Grape, Waukesha	3 00

Best 6 nutmeg melons.

410	C. J. Fraser, Vernon	3 00
487	John Grape, Waukesha	2 00

Best parsnips.

1369	C. Wynoble, St. Francis	3 00
410	C J Fraser, Vernon	2 00

Best 12 red peppers.

487	John Grape, Waukesha	2 00

Digitized by Google

Best peck vegetable oysters.

No. 1369	C. Wynoble, St. Francis	$2 00
723	J. C. Loomis, Alma Center	1 00

Best 6 hubbard squashes.

487	John Grape, Waukesha	3 00
1369	C. Wynoble, St. Francis	2 00

Largest squash, any variety.

1369	C. Wynoble, St. Francis	3 00
487	John Grape, Waukesha	2 00

Best 12 tomatoes.

487	John Grape, Waukesha	3 00
410	C. J. Fraser, Vernon	2 00

Best flat turnips.

723	J. L Loomis, Alma Center	3 00
487	John Grape, Waukesha	2 00

Best rutabagas.

1146	Moses Stephenson, Weldwick	3 00
414	M. C. Foley, Wauwatosa	2 00

Best sugar beets.

1369	C. Wynoble, St. Francis	3 00

Best exhibit by professional gardener.

487	John Grape, Waukesha	5 00
1369	C. Wynoble, St. Francis	3 00

Best exhibit by non professional gardner

723	J. C. Loomis, Alma Center	5 00

CLASS 40.—*Honey.*

JUDGE—JOHN DEY—Hortonville.

Best 24 lbs clover (comb) honey.

481	Greengo & Hinkley, Colgate	10 00

Best extracted clover honey.

481	Greengo & Hinkley, Colgate	10 00

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DEPARTMENT G.—DAIRY.

CLASS 41.—*Cheese and Butter.*

JUDGE—A. V. BISHOP, Milwaukee.

Three cheeses, made at any time and awarded 40 points and over in a scale of 50 points or perfection.

No. 1376	F. D. Widder, Sheboygan—pro rata	$5 00

FACTORY CHEESE, CHEDDAR SHAPE.

Best three boxes of cheese, not less than 150 pounds.

1048	J. C. Reiuking, Bungert	35 00
10	Peter Ammon, Brandon	20 00
1376	F. D. Widder, Sheboygan	10 00

FLATS.

Best 4 boxes, not less than 120 pounds.

562	Arnold High, Berlin	35 00
10	Peter Ammon, Brandon	20 00
91	H. J. Buchen, Adell	10 00

YOUNG AMERICAS.

Best three boxes, not less than 3 pounds in a box.

1375	E. Widder, Sheboygan	30 00
250	Dasson & Blank, Sheboygan	20 00
90	A. Bahr, Timothy	10 00

SCHWEITZER CHEESE.

Pest 4 Schweitzer cheese, nor less than 150 pounds.

407	John Frick, Plymouth	30 00

CREAMERY BUTTER, FROM GATHERED CREAM.

JUDGE—A. M. PIERCE, Milwaukee.

810	E. Musselman, Dousman	35 00
1367	Robt. Wittke, Beaver Dam	20 00

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CREAMERY BUTTER FROM WHOLE MILK.

Best 3 tubs, not less than 60 pounds each.

No. 1376	F. D. Widder, Sheboygan	$35 00
641	Frank Kizer, Marshall	20 00
407	John Frick, Plymouth	10 00

DAIRY BUTTER.

Best dairy butter.

9	Mrs. N. E. Allen, Beaver dam	25 00
1058	L. B. Root, Whitewater	15 00
481	Greengo & Hinkley, Colgate	10 00

PRINT BUTTER.

Best exhibit, not less than 10 lbs.

407	John Frick, Plymouth	20 00
909	Kate F. Peffer, Pewaukee	15 00
9	Mrs. N. E. Allen, Beaver Dam	10 00

BUTTER IN NOVEL FORM OR DESIGN.

Best exhibit, not less than 10 lbs.

9	Mrs. N. E. Allen, Beaver Dam	15 00

GRANULATED BUTTER.

Best two quart jar.

969	Kate F. Peffer, Pewaukee	5 00
1367	Rott. Wittke, Beaver Dam	3 00

Babcock milk test, power.

252	A. J. Decker, Fond du Lac

Babcock milk test, hand.

252	A. J. Decker, Fond du Lac

Babcock milk tester, power machine.

165	Cornish, Curtis and Green, Ft Atkinson

Babcock milk tester, hand power.

165	Cornish, Curtis and Green, Ft. Atkinson

Digitized by Google

DAIRY IMPLEMENTS.

JUDGE—A. M. PIERCE, Milwaukee.

Milk can.

No. 1202	Nic. H. Terens, Mishicott	Commended

Butter color.

580	Hansen's laboratory, Chicago, Ill	Commended
580	Hansen's laboratory, Chicago, Ill	Commended

Rennet extract.

580	Hansen's laboratory, Chicago, Ill	Commended

Cheese color.

580	Hansen's laboratory, Chicago, Ill	Commended

Rennet tablets.

580	Hansen's laboratory, Chicago, Ill	Commended

Show of implements.

165	Cornish, Curtis and Greene, Ft. Atkinson	Commended

Dairy salt.

101	R. M. Boyd, Racine	Commended

Babcock milk test, hand power.

1056	D. H. Roe & Co., Chicago, Ill	Commended

Babcock milk test, belt power.

1056	D. H. Roe & Co., Chicago, Ill	Commended

Lacto thermometer.

1056	D. H. Roe & Co., Chicago, Ill	Commended

U. S. Separator, power machine.

252	A. J. Decker & Co., Fond du Lac	Commended

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U. S. Separator, hand or power.

No. 252 A. J. Decker, Fond du Lac..... Commended

Babcock Milk Test, power.

252 A. J. Decker, Fond du Lac..... Commended

Babcock Milk Test, hand.

252 A. J. Decker, Fond du Lac ..... Commended

Babcock Milk Tester, power machine.

165 Comish, Curtis & Green, Ft. Atkinson..... Commended

Babcock Milk Tester, hand power.

165 Comish, Curtis & Green, Ft. Atkinson..... Commended

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DEPARTMENT H—HORTICULTURE.

CLASS 42—*Fruit by Professional Growers.*

APPLES.

JUDGE—J. S. HARRIS, Minnesota.

Best display not to exceed 20 varieties.

No. 1208	A. G. Tuttle, Baraboo	$10 00
561	Chas. Hirschinger, Baraboo	7 00
403	William Fox, Baraboo	3 00

Best 10 varieties.

1208	A. G. Tuttle, Baraboo	6 00
561	Charles Hirschinger, Baraboo	4 00
968	A. J. Phillips, West Salem	2 00

Best 5 varieties adapted to Northwest.

403	William Fox, Baraboo	6 00
968	A. J. Phillips, West Salem	4 00
1208	A. G. Tuttle, Baraboo	2 00

Best 5 varieties, winter.

561	Charles Hirschinger, Baraboo	3 00
403	William Fox, Baraboo	2 00
1208	A. G. Tuttle, Baraboo	1 00

Best show seedlings.

561	Charles Hirschinger, Baraboo	7 00
968	A. J. Phillips, West Salem	3 00

Best seedling, winter. Quality considered.

968	A. J. Phillips, West Salem	3 00
561	Charles Hirschinger, Baraboo	2 00

Best seedling, summer.

561	Charles Hirschinger, Baraboo	3 00

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Best seedling, fall.

No. 1208	A. G. Tuttle, Baraboo	$3 00
968	A. J. Phillips, West Salem	2 00

Best show Russians, 10 varieties.

1208	A. G. Tuttle, Baraboo	5 00
585	A. L. Hatch, Ithaca	3 00
968	A J. Phillips, West Salem	2 00

Best plate Duchess of Oldenburg.

968	A. J. Phillips, West Salem	1 00

Best plate Fameuse.

403	William Fox, Baraboo	1 00

Best plate Golden Russett.

561	Chas. Hirschinger, Baraboo	1 00

Best plate Pewaukee.

403	William Fox, Baraboo	1 00

Best plate St. Lawrence.

585	A. L. Hatch, Ithaca	1 00

Best plate Talman Sweet.

403	William Fox, Baraboo	1 00

Best plate Utter.

561	Chas. Hirschinger, Baraboo	1 00

Best plate Alexander.

1208	A. G. Tuttle, Baraboo	1 00

Best plate Walbridge.

968	A. J. Phillips, West Salem	1 00

Best plate Plum Cider.

585	A. L. Hatch, Ithaca	1 00

Best plate Weatthy.

585	A. L. Hatch, Ithaca	1 00

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Best plate McMahon's White.

No. 585 A. L. Hatch, Ithaca $1 00

Best plate Newell's Winter.

403 William Fox, Baraboo 1 00

Best plate Wolf River.

968 A. J. Phillips, West Salem 1 00

Pest plate N. W Greening.

968 A. J. Phillips, West Salem 1 00

Best plate Haas.

585 A. L. Hatch, Ithaca 1 00

Best plate Fall Orange.

561 Chas. Hirschinger, Baraboo 1 00

Best plate Rep Kamalenka.

1208 A. G. Tuttle, Baraboo 1 00

Best plate Longfield.

1208 A. G. Tuttle, Baraboo 1 00

Best plate Yellow Transparent.

1208 A. G. Tuttle, Baraboo 1 00

Best plate Antonofka.

1208 A. G. Tuttle, Baraboo 1 00

Best plate Hibernal.

403 William Fox, Baraboo 1 00

Best plate Lubek Queen.

968 A. J. Phillips, West Salem 1 00

Largest apple.

585 A. L. Hatch, Ithaca 1 00

Handsomest apple.

1208 A. G. Tuttle, Baraboo 1 00

Digitized by Google

SIBERIAN CRABS.

Best and greatest variety, not to excede 10.

No.	968	A. J. Phillips, West Salem	$4 00
	561	Chas. Hirschinger, Baraboo	2 00

Best plate Hyslop.

	968	A. J. Phillips, West Salem	1 00

Best plate Transcendent.

	968	A. J. Phillips, West Salem	1 00

Best plate Whitney No. 20.

	968	A. J. Phillips, West Salem	1 00

Best plate Sweet Russet.

	585	A. L. Hatch, Ithaca	2 00

PEARS.

Best 3 varieties.

	561	Chas Hirschinger, Baraboo	2 00
	403	William Fox, Baraboo	1 00

Best Flemish Beauty.

	403	William Fox, Baraboo	2 00
	1208	A. G. Tuttle, Baraboo	1 00

Best Wilder on cane.

	403	William Fox, Baraboo	2 00

Best Lindley on cane.

	403	William Fox, Baraboo	2 00

Best single variety, quality to rule.

	403	William Fox, Baraboo	2 00

Best seedling grape, originated in Wisconsin.

	403	William Fox, Baraboo	3 00

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Best plate Lady.
No. 403 William Fox, Baraboo $1 00

Best plate Niagara.
403 William Fox, Baraboo 1 00

Best plate Lady Washington.
403 William Fox, Baraboo 1 00

Best plate Vergennes.
403 William Fox, Baraboo 1 00

Best plate Salem.
403 William Fox, Baraboo 1 00

Best plate Agawam.
403 William Fox, Baraboo 1 00

Best plate Merrimac.
403 William Fox, Baraboo 1 00

Best plate Worden.
403 William Fox, Baraboo 1 00

Best plate Moore's Early.
403 William Fox, Baraboo 1 00

Best plate Brighton.
403 William Fox, Baraboo 1 00

Best plate Concord.
403 William Fox, Baraboo..... 1 00

Best plate Moore's Diamond.
403 William Fox, Baraboo..... 1 00

Best plate Frances B. Hayes.
403 William Fox, Baraboo..... 1 00

Best plate White Victoria.
403 William Fox, Baraboo 1 00

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SWEEPSTAKES ON FRUIT OF ALL KINDS.

Best collection fruit of all kinds.

No. 1209	A. G. Tuttle, Baraboo	$12 00
403	William Fox, Baraboo	9 00
561	Chas. Hirschinger, Baraboo	3 00

Best bushel cranberries.

1208	A. G. Tuttle, Baraboo	3 00

CLASS 43—*Grapes by Professional Growers.*

JUDGE—J. S. HARRIS, Minn.

Best and greatest variety.

No. 403	William Fox, Baraboo	$10 00

Best 10 varieties.

403	William Fox, Baraboo	5 00
1208	A. G. Tuttle, Baraboo	3 00

Best 5 varieties.

403	William Fox, Baraboo	3 00
1208	A. G. Tuttle, Baraboo	2 00

Best Concords, on cane.

403	William Fox, Baraboo	2 00
1208	A. G. Tuttle, Baraboo	1 00

Best Delawares, on cane.

403	William Fox, Baraboo	2 00

Best Wordens, on Cane.

403	William Fox, Baraboo	2 00
1208	A. G. Tuttle, Baraboo	1 00

Digitized by Google

Best Moore's Early, on cane.

No.	403	William Fox, Baraboo	$2 00
	1208	A. G. Tuttle, Baraboo	1 00

Best Brighton, on cane.

	403	William Fox, Baraboo	2 00

Best Early Victor, on cane.

	403	William Fox, Baraboo	2 00

Best Duchess, on cane.

	403	William Fox, Baraboo	2 00

Best Empire State, on cane.

	403	William Fox, Baraboo	2 00

CLASS 44.—*Fruit by Non-Professionals.*

JUDGE—J. S. HARRIS, Minnesota.

APPLES.

Best display not exceeding 20 varieties.

No.	965	J. S. Palmer, Baraboo	$10 00
	1294	Geo. Townsend, Baraboo	7 00
	606	Geo. Jeffrey, Milwaukee	3 00

Best 10 varieties.

	1204	Geo. Townsend, Baraboo	6 00
	965	J. S. Palmer, Baraboo	4 00
	1207	Henry Tarrant, Janesville	2 00

Best 5 varieties for Northwest.

	606	Geo. Jeffrey, Milwaukee	7 00
	1207	Henry Tarrant, Janesville	5 00
	965	J. S. Palmer, Baraboo	2 00

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Best 5 varieties winter.

No.	965	J. S. Palmer, Baraboo	$3 00
	1204	Geo. Townsend, Baraboo	2 00
	606	Geo. Jeffrey, Milwaukee	1 00

Best seedlings, not less than 5 varieties.

965	J. S. Palmer, Baraboo	10 00
606	Geo. Jeffrey, Milwaukee	5 00

Best winter seedling.

606	Geo. Jeffrey, Milwaukee	3 00
965	Jay S. Palmer, Baraboo	2 00

Best fall seedling.

965	Jay S Palmer, Baraboo	3 00
606	Geo. Jeffrey, Milwaukee	2 00

Best show of Russians.

1204	Geo. Townsend, Baraboo	5 00
606	Geo. Jeffrey, Milwaukee	3 00

Best plate Duchess of Oldenburg.

173	Henry Campbell, Evansville	1 00

Best plate Fameuse.

965	Jay S. Palmer, Baraboo	1 00

Best plate Golden Russet.

1204	Geo. Townsend, Baraboo	1 00

Best plate Pewaukee.

965	Jay S. Palmer, Baraboo	1 00

Best plate St. Lawrence.

965	Jay S. Palmer, Baraboo	1 00

Best plate Utter.

965	Jay S. Palmer, Baraboo	1 00

Best plate Alexander.

1204	Geo. Townsend, Baraboo	1 00

Best plate Plumb Cider.

1204	Geo. Townsend, Baraboo	1 00

Digitized by Google

Best plate Tallman Sweet.

No. 965 Jay S. Palmer, Baraboo 1 00

Best plate Wealthy.

965 Jay S. Palmer, Baraboo 1 00

Best plate McMahon's White.

1204 Geo. Townsend, Baraboo 1 00

Best plate Newell's Winter.

965 Jay S. Palmer, Baraboo 1 00

Best plate Wolf River.

1207 Henry Tarrant, Janesville 1 00

Best plate Haas.

965 Jay S. Palmer, Baraboo 1 00

Best plate Fall Orange.

965 Jay S. Palmer, Baraboo 1 00

Best plate Repkamalenka.

1204 Geo. Townsend, Baraboo 1 00

Best plate Longfield.

1204 George Townsend, Baraboo 1 00

Best plate Yellow Transparent.

1204 Geo. Townsend, Baraboo 1 00

Best plate of Antonofka.

1204 Geo. Townsend, Baraboo 1 00

Best plate Hibernal.

1204 Geo. Townsend, Baraboo 1 00

Best plate Switzer.

1204 Geo. Townsend, Baraboo 1 00

Largest apple.

1204 Geo. Townsend, Baraboo 1 00

Digitized by Google

Handsomest apple.

No. 905	Jay S. Palmer, Baraboo	$1 00

SIBERIAN CRABS.

Best and greatest variety.

965	Jay S. Palmer, Baraboo	4 00
1204	Geo. Townsend, Baraboo	2 00

Best plate Transcendent.

965	Jay S. Palmer, Baraboo	1 00

Best plate Whitney No. 20.

965	Jay S. Palmer, Baraboo	1 00

Best Sweet Russet Crab.

1207	Henry Tarrant, Janesville	1 00

PEARS.

Best three varieties.

606	Geo. Jeffrey, Milwaukee	2 00
822	Nic. Mauer, Brookfield	1 00

Best Flemish Beauty.

1204	Geo. Townsend, Baraboo	2 00
822	Nic. Mauer, Brookfield	1 00

PLUMS.

Best 3 varieties.

1204	Geo. Townsend, Baraboo	2 00
606	Geo. Jeffrey, Milwaukee	1 00

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CLASS 45—*Grapes—Non-Professional.*

JUDGE—J. S. HARRIS, Minnesota.

Best and greatest display.

No.			
	965	Jay. S. Palmer, Baraboo	$10 00
	606	Geo. Jeffrey, Milwaukee	7 00

Best 10 varieties.

965	Jay S. Palmer, Baraboo	5 00
1204	Geo. Townsend, Baraboo	3 00

Best 5 varieties.

965	Juy J. Palmer, Baraboo	3 00
606	Geo. Jeffrey, Milwaukee	2 00

Best Concords, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Delawares, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Wordens, on cane.

965	Jay S. Palmer, Baraboo	2 0

Best Moore's Early, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Brightons, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Early Victors, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Duchess, on cane.

965	Jay S. Palmer, Baraboo	2 00

Best Empire State, on cane.

965	Jay S. Palmer, Baraboo	2 00

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Best Wilders, on cane.

965 Jay S. Palmer, Baraboo $2 00

Best Lindleys, on cane.

965 Jay S. Palmer, Baraboo 2 00

Best single variety, quality to rule.

965 Jay S. Palmer, Baraboo, (Moore's Early.) 3 00

Best plate Lady.

965 Jay S. Palmer, Baraboo 1 00

Best plate Niagara.

965 Jay S. Palmer, Baraboo 1 00

Best plate Lady Washington.

965 Jay S. Palmer, Baraboo 1 00

Best plate Vergennes.

965 Jay S. Palmer, Baraboo 1 00

Best plate Salem.

965 Jay S. Palmer, Baraboo 1 00

Best plate Agawam.

965 Jay S. Palmer. Baraboo 1 00

Best plate Merrimac.

965 Jay S. Palmer, Baraboo 1 00

Best plate Concord.

965 Jay S. Palmer, Baraboo 1 00

Best plate Brighton.

965 Jay S. Palmer, Baraboo 1 00

Best plate Moore's Early.

965 Jay S. Palmer, Baraboo 1 00

Best plate Worden.

965 Jay S. Palmer, Baraboo 1 00

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SWEEPSTAKES.

Best collection fruit of all kinds.

No. 965	Jay S. Palmer, Baraboo	$12 00
1204	Geo. Townsend, Baraboo	9 00
606	Geo. Jeffrey, Milwaukee	6 00

CLASS 46—*Nursery Trees.*

JUDGE—J. S. HARRIS, Minn.

Best collection apple trees.

561	Chas. Hirschinger, Baraboo	Diploma.

CLASS 47—*Flowers by Professional Growers.*

JUDGES—JOHN F. BARTLETT, Oconomowoc; JNO. M. DUNLAP, and WM. EDLEFSEN.

Best and most artistically arranged floral design.

No. 172	Currie Bros., Milwaukee	$10 00
1057	G. W. Ringrose, Wauwatosa	6 00

Best and most tastefully arranged basket of flowers.

1057	G. W. Ringrose, Wauwatosa	5 00
172	Currie Bros., Milwaukee	3 00

Best collection cut flowers.

172	Currie Bros., Milwaukee	5 00
1057	G. W. Ringrose, Wauwatosa	3 00

Digitized by Google

Best bouquet.

No. 172	Currie Bros., Milwaukee	$3 00
1057	G. W. Ringrose, Wauwatosa	2 00

Best 10 named dahlias.

561	Chas. Hirschinger, Baraboo	2 00

Best display roses.

172	Currie Bros., Milwaukee	5 00
1057	G. W. Ringrose, Wauwatosa	3 00

Best 5 named roses.

172	Currie Bros., Milwaukee	4 00
1057	G. W. Ringrose, Wauwatosa	2 00

Best display verbenas.

172	Currie Bros., Milwaukee	2 00

Best show pansies.

1209	William Toole, Baraboo	5 00

Best show asters.

1209	William Toole, Baraboo	2 00

Best show Gladiolus.

1057	G. W. Ringrose, Wauwatosa	4 00
1209	William Toole, Baraboo	2 00

Best show green house plants.

172	Currie Bros., Milwaukee	20 00
1057	G. W. Ringrose, Wauwatosa	10 00

Best 20 varieties green house plants in bloom.

1057	G. W. Ringrose, Wauwatosa	6 00
172	Currie Bros., Milwaukee	3 00

Best 10 geraniums.

1057	G. W. Ringrose, Wauwatosa	5 00

Best 6 fuchsias.

172	Currie Bros., Milwaukee	4 00

Best display of flowers grown by exhibitor.

172	Currie Bros., Milwaukee	10 00
1057	G. W. Ringrose, Wauwatosa	5 00

Digitized by Google

Best display ornamental foliage plants.

No.			
	983	Pitcher & Manda, Short Hills, N. J	$3 00
	172	Currie Bros., Milwaukee	4 00

Best display of ferns.

	983	Pitcher & Manda, Short Hills, N. J	Diploma.

CLASS 48.—*Flowers by Non-Professional Growers.*

JUDGES—JNO. T. BARTLETT, JNO M. DUNLAP, WM. EDELFSON.

Best and most artistically arranged floral design.

No.			
	1043	Mrs. C. H. Root, Ripon	5 00
	977	C. K. Plumb, Milton	3 00

Best collection cut flowers.

	1043	Mrs. C. H. Root, Ripon	4 00
	977	C. K. Plumb, Milton	3 00

Best collection hardy perennials.

	977	C. K. Plumb, Milton	3 00
	1043	Mrs. C. H. Root, Ripon	2 00

Basket of flowers.

	977	C. K. Plumb, Milton	3 00
	1043	Mrs. C. H. Root, Ripon	2 00

Best bouquet.

	1043	Mrs. C. H. Root, Ripon	3 00
	977	C. K. Plumb, Milton	2 00

Best pair round bouquets.

	1043	Mrs. C. H. Root, Ripon	2 09
	487	John Grape, Waukesha	1 00

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Best pair flat table bouquets.

No. 1043	Mrs. C. H. Root, Ripon	$2 00
487	John Grape, Waukesha	1 00

Best display tuberous begonia blooms.

1043	Mrs. C. H, Root, Ripon	2 00

Best display dahlias.

967	Kate Peffer, Pewaukee	2 00

Best 10 named dahlias.

977	C. K. Plumb, Milton	2 00

Best display roses.

1043	Mrs. C. H. Root, Ripon	3 00

Best 5 varieties roses, named.

1043	Mrs. C. H. Root, Ripon	3 00

Best display verbenas

1043	Mrs. C. H. Root, Ripon	2 00

Best show of asters.

1043	Mrs. C. H. Root, Ripon	2 00

Best show perennial phlox.

1043	Mrs. C. H. Root, Ripon	1 00

Best show of pansies.

1043	Mrs. C. H. Root, Ripon	2 00

Best show of petumas.

977	C. K. Plumb, Milton	1 00

Best show dianthuses.

1043	Mrs. C. H. Root, Ripon	1 00

Best show gladolias.

179	Mrs. W. A. Clapp, Wauwautosa	2 00

Best show phlox drummondi.

1043	Mrs. C. H. Root, Ripon	1 00

Digitized by Google

Best show lillies.

No. 1043 Mrs. C. H. Root, Ripon..... $2 00

Best show stocks.

1043 Mrs. C. H. Root, Ripon..... 1 00

Best show balsams

977 C. K. Plumb, Milton..... 1 00

Best show zinnias.

1043 Mrs. C. H. Root, Ripon..... 1 00

Best show sweet peas.

179 Mrs. W. A. Clapp, Wauwatosa..... 1 00

Best show green house plants.

647 Mrs. C. C. Kingsley, Milwaukee..... 6 00

Best 10 varieties green house plants in bloom.

647 Mrs. C. C. Kingsley, Milwaukee..... 3 00

Best 10 geraniums.

647 Mrs. C. C. Kingsley, Milwaukee..... 3 00

Best 6 fuchsias.

647 Mrs. C. C. Kingsley, Milwaukee..... 2 00

Best display of flowers grown by exhibitor.

977 C. K. Plumb, Milton..... 6 00
1043 Mrs. C. H. Root, Ripon..... 3 00

Best show ornamental foliage plants.

647 Mrs. C. C. Kingsley, Milwaukee..... 5 00

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DEPARTMENT J.—MACHINERY.

CLASS 49.

Best display of machinery.

No. 3 Appleton M'f'g Co., Appleton ..... Gold medal
254 Deere & Co., Moline, Ill..... Gold medal

DEPARTMENT K.—MANUFACTURES.

CLASS 50.—*Building Material, etc.*

JUDGES.—BEN. THOMAS, JR., Mineral Point; F. W. ALEXANDER, Viroqua; S. S. LANDT, Friendship.

Best drain tile.

No. 1363 Whitnell & Rademaker, Milwaukee..... $3 00

Best roofing material other than shingle.

566 F. E. Hoyt, Rochester..... 5 00

Best sliding door.

721 Lentink & Sons, Milwaukee..... .... $5 00 and diploma.

Digitized by Google

CLASS 52.—*Stoves, Furnaces, etc.*

Best cooking stove for coal.

No. 1462	Zimmerman, Syberg Co., Milwaukee	$5 00

Best cooking range.

1462	Zimmerman, Syberg Co., Milwaukee	5 00

Best parlor stove.

1462	Zimmerman, Syberg Co., Milwaukee	5 00

Display of stoves.

1462	Zimmerman, Syberg Co., Milwaukee	Silver medal.

CLASS 54.—*Instruments and Apparatus.*

Best display of mathematical and philosophical instruments and apparatus by manufacturer or agent.

No. 729	Julius Lando, Milwaukee	Diploma.

CLASS 56.—*Carriages, Wagons, etc.*

JUDGE—GEO. S. BURROWS.

Best two seated open carriage.

No. 809	Milwaukee Buggy Co., Milwaukee	$ 5 00
242	John Dorsch & Sons, Milwaukee	3 00

Best two seated top carriage.

171	Columbia Carriage Co., Milwaukee	10 00
1127	D. M. Sechler Carriage Co., Moline, Ill	5 00

Digitized by Google

Best single top buggy.

No.			
	171	Columbia Carriage Co., Milwaukee	$5 00
	651	Kalamazoo Wagon Co., Kalamazoo, Michigan	3 00

Best open buggy.

	885	Northwestern Carriage & Sleigh Co., Milwaukee	5 00
	651	Kalamazoo Wagon Co., Kalamazoo, Mich	3 00

Best speeding road wagon.

	242	John Dorsch & Sons, Milwaukee	5 00
	1134	Saveland, Field & Co , Milwaukee	3 00

Best phaeton.

	171	Columbia Carriage Co., Milwaukee	5 00
	181	Columbia Carriage Co., Columbus, Ohio	3 00

Best two seated light sleigh.

	885	Northwestern Carriage & Sleigh Co., Milwaukee	5 00
	809	Milwaukee Buggy Co., Milwaukee	3 00

Best double farm sleigh.

	1141	Stoughton Wagon Co., Stoughton	5 00

Best single cutter—swell box.

	809	Milwaukee Buggy Co., Milwaukee	3 00
	651	Kalamazoo Wagon Co., Kalamazoo, Mich	2 00

Single or double Portland.

	242	John Dorsch & Sons, Milwaukee	5 00
	171	Columbia Carriage Co., Milwaukee	3 00

Best common farm wagon

	1141	Stoughton Wagon Co., Stoughton	5 00
	242	John Dorsch & Sons, Mliwaukee	3 00

Fancy farm wagon.

	242	John Dorsch & Sons, Milwaukee	5 00
	322	John Esch & Son, Milwaukee	3 00

Best spring 3 seated wagon.

	1379	Wisconsin Wagon Co., Madison	5 00
	885	Northwestern Carriage & Sleigh Co., Milwaukee	3 00

Best display trotting sulkies.

	171	Columbia Carriage Co., Milwaukee	Diploma.

Digitized by Google

Best two-seated surrey.

No.	171	Columbia Carriage Co., Milwaukee	$5 00
	651	Kalamazoo Wagon Co., Kalamazoo, Mich	3 00

Best combination spring wagon.

	809	Milwaukee Buggy Co., Milwaukee	5 00
	885	Northwestern Carriage & Sleigh Co., Milwaukee	3 00

Best spring freight wagon.

	322	John Esch & Son, Milwaukee	5 00
	242	John Dorsch & Sons, Milwaukee	2 00

Best spindle box wagon.

	242	John Dorsch & Sons, Milwaukee	3 00

Best road cart.

	242	John Dorsch & Sons, Milwaukee	3 00
	1127	D. M. Sechler Carriage Co., Moline, Ill	2 00

Best delivery wagon.

	242	John Dorsh & Sons, Milwaukee	5 00
	885	Northwestern Carriage and Sleigh Co., Milwaukee	3 00

Best heavy logging sleigh.

	1141	Stoughton Wagon Co., Stoughton	5 00

CLASS 57—*Cabinetware, etc.*

JUDGES—BEN THOMAS, JR., F. W. ALEXANDER, S. S. LANDT.

Best parlor set.

No.	180	Clement, Williams & Co	$10 00

Best chamber set.

	180	Clement, Williams & Co	10 00

Best extension table.

	180	Clement, Williams & Co	3 00

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Best center table.

No. 180 Clement, Williams & Co..... $3 00

Best book case.

180 Clement, Williams & Co 3 00

Best writing table or desk.

180 Clement, Williams & Co..... 3 00

Best spring bed bottom.

180 Clement, Williams & Co..... 3 00

Best six dining chairs.

180 Clement, Williams & Co..... 3 00

Best reclining chair.

180 Clement, Williams & Co..... 3 00

CLASS 60—*Textile Fabrics, etc.*

Best exhibit carpets and rugs.

No. 495 Gimbel Bros., Milwaukee... ..... $10 00

Best suit men's clothing

94 Browning, King & Co., Milwaukee..... 5 00

Best suit boys' clothing.

94 Browning, King & Co., Milwaukee..... 5 00

Best exhibit of furs and fur goods.

558. Hansen's Empire Company, Milwaukee..... 10 00

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DEPARTMENT L—FINE ARTS.

JUDGE—JAMES R. STUART, Madison.

CLASS 61—*Musical Instruments.*

SEWING MACHINES, ETC.

Best exhibit sewing machines.

No. 1364	White Sewing Machine Co., Milwaukee	Diploma.

CLASS 62—*Sewing Machine Work.*

Best display machine work.

1364	White Sewing Machine Co., Milwaukee	$10 00
603	Mrs. R. E. Jones, Milwaukee	3 00

CLASS 63—*Works of Art.*

Best collection of oil paintings, not less than 25.

1053	Roebel & Remhardt, Milwaukee	40 00
967	Mrs. O. Pratt, Spring Prairie	20 00

Best collection oil paintings, not less than 10.

967	Mrs. O. Pratt, Spring Prairie	15 00
570	Mrs. J. Hamilton, Milwaukee	10 00

Best oil painting.

1053	Roebel & Remhardt, Milwaukee	10 00

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Best collection in water colors, not less than 25.

No. 1053	Roebel & Remhardt, Milwaukee	$15 00
577	F. W. Heine, Milwaukee	10 00

Best painting in water colors.

577	F. W. Heine, Milwaukee	5 00

Best collection steel engravings, not less than 25.

1053	Roebel & Remhardt, Milwaukee	15 00

Best steel engraving.

1053	Roebel & Remhardt, Milwaukee	5 00

Best collection etchings, not less than 25.

1050	Roebel & Remhardt, Milwaukee	$15 00

Best etching.

1053	Roebel & Remhardt, Milwaukee	5 00

Best crayon drawing.

648	Miss Marion Kavanaugh, Milwaukee	5 00

CLASS 64—*Artists' Work.*

Best portrait in oil.

649	Mrs Jean Kavanaugh, Milwaukee	12 00
567	Henry Hess, Madison	8 00

Best original landscape in oil.

1370	C. Tredupp, Milwaukee	12 00
649	Mrs. Jean Kavanaugh, Milwaukee	8 00

Best landscape in oil.

176	Mrs. A. B. Chamberlain, Milwaukee	8 00
1870	C. Tredupp, Milwaukee	5 00

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Best animal painting.

No. 570	Mrs. J. Hamilton, Milwaukee	$12 00

Best painting, still life, oil.

967	Mrs. O. Pratt, Spring Prairie	10 00

Best marine painting, oil.

967	Mrs. O. Pratt, Spring Prairie	12 00
570	Mrs. J. Hamilton, Milwaukee	8 00

Best game painting, oil.

648	Miss Marion Kavanaugh, Milwaukee	5 00

Best fruit piece in oil.

649	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best flower painting, oil.

649	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best figure painting, oil.

967	Mrs O. Pratt, Spring Prairie	5 00

Best collection oil paintings by Wisconsin artist, not less than 15 pictures.

649	Mrs. Jean Kavanaugh, Milwaukee	40 00
1370	C. Tredupp, Milwaukee	20 00

Best landscape in water colors.

649	Mrs Jean Kavanaugh, Milwaukee	5 00

Best marine painting, water colors.

971	Martha Patitz, Milwaukee	5 00

Best figure painting, water colors.

972	Alfred Paul, Milwaukee	3 00

Best still life, water colors.

649	Mrs. Jean Kavanaugh, Milwaukee	3 00

Best bird, water colors.

649	Mrs. Jean Kavanaugh, Milwaukee	3 00

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Best portrait, water colors.

No.			
	249	Winifred Davis, Milwaukee	$3 00

Best panel, water colors.

	649	Mrs. Jean Kavanaugh, Milwaukee	3 00

Best flower, water colors.

	967	Mrs. O. Pratt, Spring Prairie	3 00

Best collection painting, water colors, by Wisconsin artists.

	971	Martha Patitz, Milwaukee	15 00
	640	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best landscape in pastel, from nature.

	649	Mrs. Jean Kavanaugh, Milwaukee	3 00

Best fruit in pastel, from nature.

	648	Miss Marion Kavanaugh, Milwaukee	3 00

Best flowers in pastel, from nature.

	649	Mrs Jean Kavanaugh, Milwaukee	3 00

Best figure in pastel, from nature.

	648	Miss Marion Kavanaugh, Milwaukee	3 00

Best single piece, china painting.

	1464	Margaret Zimmerman, Milwaukee	3 00

Best collection china painting.

	649	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best landscape photograph.

	164	James I. Clark, Milwaukee	2 00

Best collection photographs, etc., by exhibitor.

	164	James I. Clark, Milwaukee	8 00

Best collection photographic copies of oil paintings.

	164	James I. Clark, Milwaukee	8 00

Best crayon drawing by exhibitor.

	648	Miss Marion Kavanaugh, Milwaukee	5 00

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Best crayon from photograph.

No. 649 Mrs. Jean Kavanaugh, Milwaukee..... $5 00

Best pencil drawing.

249 Winifred Davis, Milwaukee..... 3 00

Best specimen charcoal or free hand drawing.

148 Miss Marion Kavanaugh, Milwaukee 3 00

Best specimen of etching by etcher.

404 Miss Hattie Foot, Spring Prairie..... 5 00

Best set architectural plans.

975 Mrs. E. O. Parker, Evansville, Ill..... 5 00

Best collection of oil printings by amatures, not more than 15 pictures.

176 Mrs. A. B. Chamberlain, Milwaukee..... 20 00
967 Mrs. O. Pratt, Spring Prairie..... 10 00

Best collection paintings in water colors, by amatuer, not more than 15 pictures.

967 Mrs. O. Pratt, Spring Prairie..... 15 00
648 Miss Marion Kavanaugh. Milwaukee..... 8 00

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DEPARTMENT M—WOMAN'S WORK.

CLASS 66—*Needle Work, Fancy Work, etc.*

JUDGE—M. L. MCNAUGHTON, Milwaukee.

Best sample plain sewing, hand work.

No.			
	84	Miss Genevieve Bartels, Milwaukee	$2 00
	646	Miss J. G. Kestol, Whitewater	1 00

Best embroidered underclothes, hand made.

	84	Miss Genevieve Bartels, Milwaukee	2 00
	569	Mrs A. F. Higbee, Waukesha	1 00

Best embroidered undercloths, machine made.

	88	Miss Carrie Baerwald, Milwaukee	2 00

Best hand braid work.

	84	Miss Genevieve Bartels, Milwaukee	2 00

Best pillow shams, drawn work.

	1201	Mrs. G. E. Talbert, Beaver Dam	2 00
	5	Mrs. F. L. Aude, Milwaukee	1 00

Best collection in drawn work.

	646	Mrs. J. G. Kestol, Whitewater	3 00
	1205	Mrs. F. W. Tratt, Whitewater	1 00

Best embroidered pillow shams.

	805	S. J. Manchester, La Crosse	2 00
	89	Mrs. H. M. Brigham, Waukesha	1 00

Best embroidery, tip stitching on satin jean.

	84	Miss Genevieve Bartels, Milwaukee	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

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Best table center piece.

No.			
	803	Miss Nellie Manchester, La Crosse	$2 00
	569	Mrs. A. F. Higbee, Waukesha	1 00

Best tray cloth.

803	Miss Nellie Manchester, La Crosse	2 00
1208	A. G. Tuttle, Baraboo	1 00

Best needle etching on silk.

1208	A. G. Tuttle, Baraboo	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

Best pen etching on linen.

404	Miss Hattie Foote, Spring Prairie	2 00
1150	Mrs. M. A. Stevens, Racine	1 00

Best embroidered lunch cloth.

84	Miss Genevieve Bartels, Milwaukee	2 00
803	Miss Nellie Manchester, La Crosse	1 00

Best table scarf or spread.

84	Miss Genevieve Bartels, Milwaukee	2 00
803	Miss Nellie Manchester, La Crosse	1 00

Best embroidered piano cover.

803	Miss Nellie Manchester, La Crosse	2 00
1136	Miss Ida Sprague, Watertown	1 00

Best Kensington embroidery.

803	Miss Nellie Manchester, La Crosse	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

Best Chenille embroidery.

803	Miss Nellie Manchester, La Crosse	1 00

Best rope silk embroidery.

803	Miss Nellie Manchester, La Crosse	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

Best embroidery on bolting cloth.

84	Miss Genevieve Bartels, Milwaukee	2 00
5	Mrs. F. L. Aude, Milwaukee	1 00

Best embroidery on pineapple silk.

84	Miss Genevieve Bartels, Milwaukee	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

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Best embroidery in crewel.

No. 488	Mrs. Geo. Gunther, Milwaukee	$2 00
1361	Miss Ida Winddish Des Moines, Iowa	1 00

Best cut work embroidery.

246	Mrs. L. Dewelle, Whitewater	2 00
84	Mrs. Genevieve Bartels, Milwaukee	1 00

Best lay cord work.

1208	A. G. Tuttle, Baraboo	2 00
1201	Mrs. G. E. Talbert, Beaver Dam	1 00

Best arasene embroidery.

803	Miss Nellie Manchester, La Crosse	1 00

Best floss embroidery.

84	Miss Genevieve Bartels, Milwaukee	2 00

Best French embroidery.

803	Miss Nellie Manchester, La Crosse	1 00

Best infants' robe and skirt.

88	Mrs. Carrie Baerwald, Milwaukee	1 00

Best silk embroidery with white silk floss.

84	Miss Genevieve Bartels, Milwaukee	2 00
1361	Miss Ida Winddish, Des Moines, Iowa	1 00

Best silk embroidery, colored silk floss.

1361	Miss Ida Wenddish, Des Moines, Iowa	2 00
803	Miss Nellie Manchester, La Crosse	1 00

Best darning in fancy stitches.

84	Miss Genevieve Bartels, Milwaukee	2 00
1361	Miss Ida Winddish, Des Moines, Iowa	1 00

Best wall banner, not painted.

803	Miss Nellie Manchester, La Crosse	2 00
569	Mrs. A. F. Higbee, Waukesha	1 00

Best embroideried Afgan.

1361	Miss Ida Winddish, Des Moines, Iowa	2 00

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Best cotton tidy.

No.			
	84	Miss Genevieve Bartels, Milwaukee	$2 00
	84	Miss Genevieve Bartels, Milwankee	1 00

Best worsted tidy.

	1361	Miss I a Winddish, Des Moines, Iowa	2 00
	88	Mrs. Carrie Baerwald, Milwaukee	1 00

Best easel scarf.

	803	Miss Nellie Manchester, La Crosse	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

Best embroidered shopping bag.

	1205	Mrs. F. W. Tratt, Whitewater	2 00
	975	Mrs. E. O. Parker, Evanston, Ill	1 00

Best ladies' fancy apron.

	404	Miss Hattie Foote, Spring Prairie	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

Best photograph holder.

	323	H. Ekhart, Milwaukee	2 00
	1361	Miss Ida Winddish, Des Moines, Iowa	1 00

Best toilet set, bottle and cushion

	569	Mrs. A. F. Highy, Waukesha	2 00
	803	Miss Nellie Manchester, La Crosse	1 00

Best toilet set, mats and cushion.

	84	Miss Genevieve Bartels, Milwaukee	2 00
	1361	Miss Ida Winddish, Des Moines, Iowa	1 00

Best chair roll or head rest.

	84	Miss Genevieve Bartels, Milwaukee	2 00
	88	Mrs. Carrie Baerwald, Milwaukee	1 00

Best toilet cushion.

	84	Miss Genevieve Bartels	2 00
	1205	Mrs. F. W. Tratt, Whitewater	1 00

Best sofa cushion.

	803	Miss Nellie Manchester, La Crosse	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

Best Ottoman cover.

	1361	Miss Ida Winddish, Des Moines, Iowa	2 00

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Best hand decorated table.

No. 649	Mrs. Jean Kavanaugh, Milwaukee	$3 00

Best decorated chair.

5	Mrs. F. L. Aude, Milwaukee	2 00

Best music rack or portfolio.

1361	Miss Ida Winddish, Des Moines, Iowa	3 00

Best basket in rope work.

88	Mrs. Carrie Baerwald, Milwaukee	1 00

Best set doylies.

803	Miss Nellie Manchester, La Crosse	3 00
803	Miss Nellie Manchester, La Crosse	1 00

CLASS 67—*Knitting, Crochet and Lace.*

JUDGE—MRS. MARY E. WARREN, Fox Lake.

Best point lace, work of exhibitor.

No. 1283	Mrs. S. A. Van Valkenburg, Oshkosh	$2 00
483	J. J. Groff, Burlington	1 00

Best Houston lace, work of exhibitor.

1283	Mrs. S. A. Van Valkenburg, Oshkosh	2 00

Best lace, any kind, work of exhibitor.

483	J. J. Groff, Burlington	2 00
571	Miss Anna Helberg, Milwaukee	1 00

Best darned lace.

1136	Miss Ida Sprague, Watertown	2 00
324	Mrs. A. P. Ellinwood, Reedsburg	1 00

Best Applique embroidery or lace.

84	Miss Genevieve Bartels, Milwaukee	2 00

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Best Macrême lace lambrequin.

No.			
No.	975	Mrs. E. O. Parker, Evanston. Ill	$3 00

Best crochet counterpane.

85	Julia Brown, Waukesha	4 00
406	Miss Anna Frey, Milwaukee	2 00

Best crochet pillow shams.

85	Julia Brown, Waukesha	3 00
98	Mrs. F. G. Birkel, Milwaukee	1 00

Best crochet shawl.

88	Mrs. Carrie Baerwald, Milwaukee	3 00

Best crochet lady's skirt.

483	J. J. Groff, Burlington	3 00
589	Mrs. A. J. Hayes, Milwaukee	2 00

Best crochet slippers or shoes.

805	S. J. Manchester, La Crosse	2 00

Best crochet Afghan.

975	Mrs. E. O. Parker, Evanston, Ill	3 00

Best collection crochet work.

85	Julia Brown, Waukesha	2 00
1150	Mrs. M. A. Stevens, Racine	1 00

Best knit counterpane.

488	Mrs. Geo. Gunther, Milwaukee	4 00
88	Mrs. Carrie Baerwald, Milwaukee	2 00

Best knit pillow shams.

88	Mrs. Carrie Baerwald, Milwaukee	3 00

Best knit shawl.

89	Mrs. H. M. Brigham, Waukesha	3 00

Best silk mittens.

85	Julia Brown, Waukesha	2 00
1121	Mrs. William Sweeney, Fox Lake	1 00

Best knitted slippers.

578	Mrs. Dan. Huntley, Appleton	2 00
488	Mrs. Geo. Gunther, Milwaukee	1 00

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Best woolen stockings.

No. 85	Julia Brown, Waukesha	$2 00
1121	Mrs. William Sweeney, Fox Lake	1 00

Best woolen socks.

606	Geo. Jeffrey, Milwaukee	2 00
1121	Mrs. William Sweeney, Fox Lake	1 00

Best fancy knitting work.

488	Mrs. Geo. Gunther, Milwaukee	2 00
1150	Mrs. M. A. Stevens, Racine	1 00

CLASS 68—*Domestic Manufactures.*

JUDGE—MRS. MARY E. WARREN, Fox Lake.

Best mantel lambrequin.

1361	Miss Ida Winddish, Des Moines, Iowa	2 00
569	Mrs. A. F. Higbee, Wau esha	1 00

Best portiere for window or door.

652	Miss A. M. Korizek, Racine	3 00
1361	Miss Ida Winddish, Des Moines, Iowa	2 00

Best white quilt, hand work.

169	Mrs. J. M. Chadwick, Watertown	4 00

Best patch work quilt.

169	Mrs. J. M. Chadwick, Watertown	4 00
1136	Miss Ida Sprague, Watertown	2 00

Best silk log cabin quilt.

169	Mrs. J. M. Chadwick, Watertown	4 00
483	J. J. Groff, Burlington	2 00

Best silk quilt.

246	Mrs. L. Dewelle, Whitewater	2 00
89	Mrs. H. M. Brigham, Waukesha	4 00

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Best rug, any material.

No.			
	488	Mrs. Geo. Gunther, Milwaukee	$3 00
	483	J. J. Graff, Burlington	1 00

Best braided rug.

	606	Geo. Jeffrey, Milwaukee	2 00

Best 10 yards rag carpet.

	969	Kate Peffer, Pewaukee	4 00
	93	Mrs. Mary Bell, North Greenfield	2 00

Best ladies' dress made by non-professional.

	84	Miss Genevieve Bartels, Milwaukee	4 00
	646	Mrs. J. G. Kestol, Whitewater	2 00

Best specimen drawing.

	404	Miss Hattie Foot, Spring Prairie	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

Best specimen patched mending.

	84	Miss Genevieve Bartels, Milwaukee	2 00
	805	S. J. Manchester, La Crosse	1 00

CLASS 69.—*Miscellaneous.*

JUDGE—MRS. M. L. MCNAUGHTON, MILWAUKEE.

Best China painting—single piece.

	649	Mrs. Jean Kavanaugh, Milwaukee	3 00
	1150	Mrs. M. A. Stevens, Racine	1 00

Best collection china painting.

	1150	Mrs. M. A. Stevens, Racine	5 00
	1464	Margaret Zimmerman, Milwaukee	3 00

Best potpourri jar.

	803	Miss Nellie Manchester, La Crosse	3 00

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Best wall banner, painted.

No. 641	Frank Kizer, Marshall	$2 00
583	M. F. Hilman, Brandon	1 00

Best Kensington painting, in oil.

975	Mrs. E. O. Parker, Evanston, Ill.	3 00

Best velvet painting, in oil.

583	M. F. Hilman, Brandon	2 00

Best painting on silk or satin.

1150	Mrs. M. A. Stevens, Racine	3 00

Best painting on bolting cloth.

649	Mrs. Jean Kavanaugh, Milwaukee	2 00

Best painting on celluloid.

649	Mrs. Jean Kavanaugh. Milwaukee	2 00

Best painted drape.

570	Mrs. J. Hamilton, Milwaukee	2 00

Best painted tile.

169	Mrs. J. M. Chadwick, Watertown	2 00

Best repousse or hammered brass work.

1150	Mrs. M. A. Steveus, Racine	3 00

Best incised wood carving.

975	Mrs. E. O. Parker, Evanston, Ill.	3 00

Best s roll sawing.

97	Claude Beebe, Milwaukee	3 00

Best relief wood carving.

975	Mrs. E. O. Parker, Evanston, Ill.	3 00

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CLASS 70—*Household Products.*

JUDGE—MRS. H. P. ELLINWOOD, Reedsburg.

Best loaf Graham bread.

No.			
	93	Mrs. Mary Bell, North Greenfield	$3 00
	722	Miss Ella Leonard, La Crosse	2 00

Best loaf white bread.

	5	Mrs. F. L. Aude, Milwaukee	3 00
	179	Mrs. W. A. Clapp, Wauwatosa	2 00

Best loaf Indian bread.

	412	Mrs. M. C. Foley, Wauwatosa	3 00
	722	Miss Ella Leonard, La Crosse	2 00

Best plate rolls.

	93	Mrs. Mary Bell, North Greenfield	3 00
	722	Miss Ella Leonard, La Crosse	2 00

Best pineapple cake.

	86	Mrs. John Brickels, Wau esha	2 00

Best chocolate gold cake.

	722	Miss Ella Leonard, La Crosse	2 00
	607	Miss Anna Jacobs, Wauwatosa	1 00

Best fruit cake.

	746	Mrs. J. V. Kestol, Whitewater	2 00
	84	Miss Genevieve Bartels, Milwaukee	1 00

Best doughnuts.

	722	Miss Ella Leonard, La Crosse	2 00

Best English walnut cream cake.

	722	Miss Ella Leonard, La Cross	1 00

Best almond cream cake.

	412	Mrs. M. C. Foley, Wauwatosa	2 00

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Best maple sugar cake.

No. 722	Miss Ella Leonard, La Crosse	$2 00

Best chocolate caramel cake.

722	Miss Ella Leonard, La Crosse	2 00

Best chocolate cream cake.

412	Mrs. M. C. Foley. Wauwatosa	2 00
86	Mrs. John Brickels, Waukesha	1 00

Best angel food cake.

412	Mrs. M. C. Foley, Wauwatosa	1 00

Best orange cake.

722	Miss Ella Leonard, La Crosse	1 00

Best fig cake.

722	Miss Ella Leonard, La Crosse	1 00

Best date cake.

722	Miss Ella Leonard, La Crosse	1 00

Best cocoanut cake.

93	Mrs. Mary Bell, North Greenfield	1 00

Best pound cake.

805	S. J. Manchester, La Crosse	2 00

Best and largest collection of above.

722	Miss Ella Leonard, La Crosse	5 00
412	Mrs. M. C. Foley, Wauwatosa	3 00

Best canned peaches.

1043	Mrs. C. H. Root. Ripon	2 00
606	Geo. Jeffrey, Milwaukee	

Best canned plums.

1043	Mrs. C. H. Root, Ripon	2 00
84	Genevieve Bartels, Milwaukee	1 00

Best canned currants.

1043	Mrs. C. H. Root, Ripon	2 00

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Best canned tomatoes.

No. 1043	Mrs. C. H. Root, Ripon	$2 00

Best canned gooseberries.

1043	Mrs. C. H Root, Ripon	2 00
722	Miss Ella Leonard, La Crosse	1 00

Best canned raspberries.

84	Miss Genevieve Bartels, Milwaukee	2 00
86	Mrs. John Brickels, Waukesha	1 00

Best canned strawberries.

84	Miss Genevieve Bartels, Milwaukee	2 00
722	Miss Ella Leonard, La Crosse	1 00

Bect canned grapes.

84	Miss Genevieve Bartels, Milwaukee	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

Best canned blackberries.

84	Miss Genevieve Bartels, Milwaukee	2 00
86	Mrs. John Brickels, Waukesha	1 00

Best canned cherries.

84	Miss Genevieve Bartels, Milwaukee	2 00
1043	Mrs. C. H. Root, Ripon	1 00

Best canned pears.

1043	Mrs. C. H. Root, Ripon	2 0
606	George Jeffrey, Milwaukee	1 0

Best canned crab apples.

1043	Mrs. C. H. Root, Ripon	2 00

Best plum jelly.

606	Geo. Jeffrey, Milwaukee	2 00
1043	Mrs. C. H. Root, Ripon	1 00

Best current jelly.

1043	Mrs. C. H. Root, Ripon	2 00
722	Miss Ella Leonard La Crosse	1 00

Best red raspberry jelly

1043	Hrs. C. H. Root, Ripon	2 00
86	Mrs. John brickels, Waukesha	1 00

Digitized by Google

Best crab-apple jelly.

No. 1043	Mrs. C. H. Root, Ripon	$2 00
86	Mrs. John Brickels, Waukesha	1 00

Best blackberry jelly.

1043	Mrs. C. H. Root, Ripon	2 00
722	Miss Ella Leonard, La Crosse	1 00

Best grape jelly.

1043	Mrs. C. H. Root, Ripon	2 00
86	Mrs. John Brickels, Waukesha	1 00

Best raspbery jam.

1043	Mrs. C. H. Root, Ripon	2 00
94	Miss Genevieve Bartels	1 00

Best blackberry jam.

1043	Mrs. C. H. Root, Ripon	2 00
84	Miss Ella Leonard, La Crosse	1 00

Best sweet pickled peaches.

1043	Mrs. C. H. Root, Ripon	2 00
606	Geo. Jeffrey, Milwaukee	1 00

Best sweet pickled apples.

1043	Mrs. C. H. Root, Ripon	2 00
84	Miss Genevieve Bartels, Milwaukee	1 00

Best pickled pears.

1043	Mrs. C. H. Root, Ripon	2 00
606	Geo. Jeffrey, Milwaukee	1 00

Best Chili sauce.

722	Miss Ella Leonard, La Crosse	2 00
1043	Mrs. C. H. Root, Ripon	1 00

Best tomato catsup.

1043	Mrs. C. H. Root, Ripon	2 00
646	Mrs. J. G. Kestol, Whitewater	1 00

Best sour pickles.

1043	Mrs. C. H. Root, Ripon	2 00

Best cucumbers.

722	Miss Ella Leonard, La Crosse	2 00

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Best cauliflower.

No. 1043	Mrs. C. H. Root, Ripon	$2 00
86	Mrs. John Brickels, Waukesha	1 00

Best onions.

722	Miss Ella Leonard, La Crosse	2 00
1043	Mrs. C. H. Root, Ripon	1 00

Best mixed pickles.

86	Mrs. John Brickels, Waukesha	2 00
1043	Mrs. C. H. Root, Ripon	1 00

Best mustard pickles.

1043	Mrs. C. H. Root, Ripon	2 00

Best and largest exhibit of fruits, jellies, jams and pickles.

1043	Mrs. C. H. Root, Ripon	5 00
722	Miss Ella Leonard, La Crosse	3 00

CLASS 70—*Work of Boys and Girls under 15 years of age.*

JUDGE—MRS. MARY E. WARREN, Fox Lake.

Best sample of plain sewing.

162	Miss Pearl H. Campbell, Evansville	2 00

Best one dozen button holes.

162	Miss Pearl H. Campbell, Evansville	2 00

Best toilet mats.

244	Miss Meda Dean, Milwaukee	1 00

Best outlining in Kensington.

244	Miss Meda Dean, Milwaukee	1 00

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Best handkerchief in drawn work.

No. 162 Miss Pearl H. Campbell, Evansville..... $1 00

Best toilet cushion.

244 Miss Meda Dean, Milwaukee..... 1 00

Best sponge cake.

101 R. M. Boyd, Racine..... 1 00

Best collection bracket work.

88 E. Von Briesen, Columbus..... 3 00

Best model barn or dwelling.

95 Claude Beebe, Milwaukee..... 2 00

Best Map of Wisconsin.

95. Claude Beebe, Milwaukee..... 2 00

Best collection of coins.

95 Claude Beebe, Milwaukee..... 2 00

Collection noxious weeds of Wisconsin.

95 Claude Beebe, Milwaukee..... 2 00

Best medley picture.

95 Claude Beebe, Milwaukee..... 2 00

Best collection of shells.

95 Claude Beebe, Milwaukee..... 2 00

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Oratorical Contest.

JUDGES—A. F. WARDEN, Plymouth; M. A. THAYER, Sparta; MRS. VIE H. CAMPBELL, Evansville.

Best oratorical effort, young lady under 18.

No. 2 Miss Cora Armin, Waukesha.....Gold Medal
984 Miss Flossie Payler, Brooklyn.....Commended

Best oratorical effort, young gentleman under 18.

1055 Floyd A. Ross, Pewaukee.....Gold Medal
1463 W. Zimmers, Racine..... Commended

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REPORTS OF SUPERINTENDENTS.

SPEED DEPARTMENT.

To the Executive Board of Wisconsin State Agricultural Society:

GENTLEMEN—Below find statement of speed department entrance money collected:

2:30 pace	$225 00	
2:29 trot	150 00	
2:50 trot	225 00	
2:25 trot	225 00	
2:33 trot	225 00	
2:40 trot	200 00	
		$1,250 00
Runners		90 00
		1,340 00
Stall rent		202 00
Total receipts		$1,542 00

Respectfully submitted,

J. G. BOYD,

Superintendent Speed Department.

DEPARTMENT A.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN:—The exhibit in the horse department for 1892 was good and nearly all of the various classes were well filled.

The new barns of the society are well located, roomy and commodious and gave general satisfaction to exhibitors.

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The number will doubtless have to be increased in the near future to meet the demands of the ever growing industry of horse breeding. The number of box stalls are insufficient for present demands, and are perhaps, out of proportion to the number of open stalls.

Competition in this department was strong in each and all classes; and while general satisfaction with awards made was the rule; yet there were exceptions, and quite a number of protests were entered against decisions made, and brought before your body for investigation. I failed to note any good result, either to the society or exhibitors, by reason of any of the protests that were entered, and I invite the consideration of the society to the question of doing away with the rule allowing protests, and making the decision of judges final. Great care should be taken in the selection of judges, and when this is done it is questionable if any good can come from appeals from awards made.

My first experience as superintendent was, in many respects pleasant, and I have reason to feel grateful for friendly advice and encouraging words from those who had had a greater experience; and I am especially indebted to Mr. C. H. Everett, of Beloit, for the efficient and intelligent services he rendered as assistant in this department.

My thanks are due to exhibitors for courteous treatment and for the general good feeling that prevailed among them.

Respectfully submitted,

C. A. YOUMANS,
Superintendent.

DEPARTMENT B.

Gentlemen of the Executive Board of the Wisconsin State Agricultural Society.

The exhibit in Department "B"—Cattle, at the state fair in the fall of 1892 proved to be one of the most satisfactory in the history of the society.

Over three hundred cattle, representing the most popular

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breeds were on exhibition, filling the new barns, and overflowing them so that space in the horse stables had to be used to a considerable extent.

While Wisconsin as a state had no traveling herd, our exhibit as compared with other states was creditable, and our people may congratulate themselves in taking rank among the first with the sister states. I could particularize, but a reference to the premium list will demonstrate the fact, that while we have a goodly display from other states, Wisconsin kept within her borders most of the "blue ribbons."

Among the many improvements that will be necessary to be made on our new grounds, it is imperative that one more cattle barn be built.

I would recommend a few large premiums be offered, wherein the competitors pay a percentage for entry. Other than this, in our present condition, our premium list is quite as liberal as at other state fairs.

Respectfully submitted,

A. A. ARNOLD,
Superintendent.

DEPARTMENT C.

Gentlemen of the Board of the Wisconsin State Agricultural Society:

The exhibition of sheep at the fair of 1892, was, I think, generally considered to be the best in the history of the society. The convenience and comfort of our new quarters was appreciated by all. The pens were nearly all filled. We had about 600 sheep on exhibition. By a little crowding we could have accommodated 100 more. All the mutton breeds were represented. The Shropshires taking the lead in numbers, followed close by the Oxfords. Next were the Cotswolds; the showing of Southdowns was not large,

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but excellent in quality. The show of Merinoes was large, quality good, they nearly filling one of the barns.

The fair of 1892, so far as it pertains to Department C, must be considered a success.

Respectfully submitted,

C. M. CLARK,
Superintendent.

DEPARTMENT D.

To the Executive Board of the Wisconsin State Agricultural Society.

GENTLEMEN:—The swine exhibit for the year 1892 was large. Out of 128 pens all were occupied but five. When states like Iowa show less than half their usual number of swine, as was the case at their annual exhibit last fall, our Wisconsin exhibit must be considered as highly creditable. The exhibitors without exception expressed themselves as highly pleased with the new quarters furnished them by the society. The awards were made in a manner that gave general satisfaction, by Mr. Chas. Lawrence, of Danville, Wisconsin.

At the annual meeting of the State Swine Breeders' Association, of which all the exhibitors are members, the request was made that your society make no change in the premium list, as they regard the present classification as being as satisfactory as can be arranged.

Respectfully submitted,

GEO. WYLIE,
Superintendent.

DEPATRMENT E.

To the Officers and Members of the Executive Committee of the State Agricultural Society.

GENTLMEN:—Department "E" for 1892 makes the following report:

The exhibits in this department were not up to former years in point of numbers, there being about 340 exhibits,

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but the quality was the best ever exhibited at any state fair, notably those of Roberts, Warner, Brabazon and several others, also a very fine display of pigeons from Mr. Leubke of Milwaukee. The building for the poultry display meets all the requirements for which it was intended, and is commended by exhibitors and judges. The great trouble heretofore has been the want of room, and the uncertainty of the completion of the buildings on the new fair grounds undoubtedly was the main cause for the shortage in the exhibit in this department.

Respectfully submitted,

WM. WILSON,
Superintendent.

DEPARTMENT G.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN:—The exhibit in Department G was not as large as it would have been had the dairymen of the state generally been assured that better provision for the care of their exhibits had been provided than in former years. The quality of the cheese and butter exhibited was pronounced by the judges of more uniform quality than any shown at fairs of previous years. In this class the teachings of the Farmers' Institute and the instruction at the State University are to be given credit for much of this change. The new building for this department is of sufficient size, and well arranged to show the exhibits to the best possible advantage. By some misunderstanding of the builders the butter room was painted on the inside, rendering it unfit for use during the fair, but with cool weather butter was kept in good condition.

The exhibits of the U. S. separator, by A. J. Decker & Co., to be operated either by hand or power, were worthy of special commendation. They also exhibit the U. S. butter extractor, which will make butter direct from sweet milk.

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E. H. Roe & Co., Chicago, Ill., exhibit hand and power Babock milk test, with Roe's improved swinging head. They also exhibit a lacto thermometer to detect watered milk.

J. H. Monrad represented the Danish butter color, rennet extract and cheese color.

Genesse salt was represented by F. A. Trip.

The De Laval Separator Co. made exhibit of their Baby Cream separator, for use on the farm, in two sizes: capacity 300 and 600 pounds per hour respectively.

Cornish & Curtis, of Fort Atkinson, made a large showing of dairy implements, both for farm and factory use, which added largely to the attractions in this department.

As the position of superintendent of this department was new to me, I desire to extend thanks for the uniform courtesy and consideration that I met with everywhere from the exhibitors.

Respectfully submitted,

DANIEL WILLIAMS,

Superintendent.

DEPARTMENT H.

To the Executive Board of the Wisconsin State Agricultural Society.

GENTLEMEN:—Your Superintendent of Department "G," Horticulture, would respectfully report that there were 433 entries in this department at the exhibit of 1892, as follows:

Apples, by professionals		218
Non-professional	75	
Flowers, by professionals		40
Non professional	90	
Pears, by professsionals		00
Non-professional	10	
Total	175	258

Considering the unfavorable season for fruit, the exhibit reflects great credit both to growers and the state at large.

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To Sauk county should be given the credit of success under this head.

The show of flowers exceeded anything before in this line.

Messrs. Currie Bros. and Geo. Ringrose, of Milwaukee, among the professionals, maintained their already high reputation as exhibitors, and the non-professionals deserve great credit for their good work.

Our exhibit received many commendations and a general good feeling prevailed among all in this department.

Respectfully submitted,

M. A. THAYER,
Superintendent.

DEPARTMENT J.

The machinery exhibit at the fair of 1892 was large and better than could have been anticipated from the existing condition of the grounds and questionable means of transportation. Exhibitors had hardly learned the location of the new fair grounds. Many had not familiarized themselves with the best means of getting exhibits there. Instead of having them marked State Fair Park, as they always should, to enable the railroads to land them on the platform at the fair grounds, they were marked Milwaukee, and left at the freight offices to be hunted up, causing delays in entering them, and in some cases not found until too late to enter or place on exhibition.

The exhibit in this department from the city of Milwaukee was good, embracing full lines of agricultural implements, buggies, carriages, etc.

The manufacturers of threshing machines and engine harvesters and binders have entered into a combination not to exhibit at any of the state fairs for a term of years, consequently there was not the bulk of machinery of former years. One exception to this combination was the firm of Wycoff & Co., of Milwaukee, who through their agent Mr. C. H. Shaw, of the Cream city, had on exhibition one of

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their latest improved harvester binders, that proved to be an object of great interest to the farmers, being almost a new machine in this state and possessing so many valuable improvements over any other binder they had ever used that a large number of orders were taken for next season's delivery, the company giving the fullest guarantee that their machine cannot be equaled by any other binder made. Among the list of exhibitors are the following old and reliable manufacturers and dealers, whose goods have become standard after years and years use by thousands of our best farmers throughout Wisconsin and the northwest.

The Storer Manufacturing Company, Milwaukee, Wis.

One 12-bds. Ideal steel mill.
One 8-ft. Ideal steel mill.
One 9-ft. Ideal steel mill.
One 10-ft. Ideal wood mill.
One 10-ft. Junior wood mill.
One 40-ft. steel tower.
One Ideal windmill regulator.
One Ideal F. M. H. P. combined.
One corn and cob attachment.
One No. 3 Duplex feed mill.
One No. 2 Duplex feed mill.
One No. 1 A Duplex feed mill.
Corn shellers.

Keystone Manufacturing Company, Sterling, Ill.

One corn husker and fodder cutter.
One hay tedder.
Two disc harrows.
One seeder 6 ft.
One corn planter.
One 1-horse drill.

P. P. Most & Co., Springfield, Ohio.

One 12 Hoe high wheel new style drill.
One 12 Hoe shoe drill.
One 5½ cultivator (riding).
One 14 cultivator (riding).
One A 3 rake steel wheels.
One 14 Hoe iron bar seeder.
One Lr. cider mill.
One hand cart.

Sterling Manufacturing Company, Sterling, Ill.

One 8-ft hay rake.
One 12-ft. hay rake.
One 8-fork hay tedder.
One 6½-ft. hay loader.
One No. 4 Victor oscillating bob sled.
One common sense potato digger.
One 2-section steel lever harrow.
One 8½-ft. Eureka seeder and cultivator.
One 8½ ft. Eureka grass seeder.
One No. 2 disc harrow.
One 3-horse equalizer.

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Ann Arbor Agricultural Co., Ann Arbor, Mich.

One feed cutter.

Foos Manufacturing Co., Springfield, Ohio.

One corn harvester.

Racine Fanning Mill Co., Racine, Wis.

One No. 1 Pacific fanning mill.
One No. 2 Pacific fanning mill.

Appleton Manufacturing Co., Appleton, Wis.

Large display of machinery.

Empire Drill Co., Jackson, Mich.

One No. 9 Hoe grain and fertilizer drill spring hoes.
One Empire grain and grass seeder shoe drill, thirteen shoe.
One Empire grain and grass seeder, broader cast drill spring hoe.

The Anderscn Transfer Co., Fond du Lac, Wis.

One Rose disc harrow.
One lever harrow.
One 16 in. Scotch Clipper tricycle plow.
One No. 6 Ex. Canton Clipper steel beam.
One No. 6 Ex. Scotch steel beam.
One No. 6 Ex. Scotch wood beam.
One No. 6 Ex. Clipper wood beam.
One No. 18 Granite chilled.
One riding plow, 3 wheels.
Four walking plows.

G. M. Marshall, Kilbourne City, Wis.

One potato digger.
Chain pipe wrenches.

L. Dorsch, Milwaukee, Wis.

One potato hiller.
One combination.
One potato digger.

South Bend Chilled Plow Co., Milwaukee, Wis.

Twelve walking plows.
One sulky.
One gang plow.
Ten walking cultivators.
One sulky plow.

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Savel, Field & Co., Milwaukee, Wisconsin.

One Hero self dump hay rake.
One Holingsworth hay rake.
One Spicer hay tedder.
One Hero hay tedder.
One Cyclone disc harrow.
One Safety disc harrow.
One Daley disc harrow.
Six general purpose plows.

Western Wheel Scraper Co., Aurora, Ill.

No. 2, wheeled scraper—natural scraper.
No. 2, drag scraper.
No. 6, road plow.
No. 7, road plow—road machine.

Eureka Mower Co., Utica, N. Y.

One Eureka mower.
One Eureka spring tooth harrow.
One Eureka spring tooth cultivator.
One Eureka shovel tooth cultivator.

Wyckoff & Co., Milwaukee, Wis.

One harvester and binder.

Hirsch Bros., Milwaukee, Wis.

Six wind mills.
Agricultural implements.

F. D. McCarthy, Milwaukee, Wis.

Two double action force and lift and double pumps for general use or deep wells.

U. S. Wind Engine & Pump Co., Batavia, Ill.

One-geared mill.
Three feed mills.
Two wood saws.
Seven pumping mills.
One feed cutter.
Fifty pumps.
Hay tools.
Cylinders.
Water works supplies.
Supply goods.

Dowagiac Co., Dowagiac, Mich.

One shoe drill.

Globe Wind Mill Co., Chicago, Ill.

Wind mills.

Wm. Achnendler, Milwaukee, Wis.

Achnendler new gate roller.

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Chas. F. Hackbarth, New Holstein, Wis.

One pulverizer and clod crusher.

D. S. Morgan & Co., Brockport, N. Y.

Spading harrow.
Seeder grain.
Two hay rakes.
One mower.
One corn cultivator.

J. L. Owens, Minneapolis, Minn.

Three grain cleaners.

Mast, Foos & Co., Springfield, Ohio,

Three wind mills.
Eleven pumps.
Six lawn mowers.

The De Loval. Separator Company, Chicago, Ill.

Two De Loval. baby cream separators.

Rock Island Plow Conpany, Rock Island, Ill.

Fourteen walking plows.
Three riding plows.
Three disc harrows
Two lever harrows.
One 5-tooth cultivator.
Three walking cultivators.
Two riding cultivators.
One hay loader.

Foster & Williams Manufacturing Company, Racine, Wis.

Two fanning mills.
One feed cutter.
One hay gatherer.
One broadcast seeder.

Johnson & Field, Racine, Wis.

One No. 1 farm fanning mill.
One No. 2 farm fanning mill.
One No. 2 warehouse mill.
One No. 4 heavy warehouse mill.

American Road Machine Company, Kennett Square, Pa.

Steel Champion road machine.
Champion rock crusher.

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Philip Meyer, Sheboygan, Wis.

Two feed cutters.
One horse power.

J. S. Rowell Manufacturing Co., Beaver Dam, Wis.

One seeder.
One press drill.
One hoe drill.

Chas. Silvercalm, West Bend, Wis.

One No. 7 feed cutter.
One No. 4 feed cutter.
One No. 0 feed cutter.

Althouse, Wheeler Co., Waupun, Wis.

One Aulthouse Vaneless wind mill.
One Aulthouse Vaneless steel mill.
10 ft. Milo Giant mill.
10 ft. Milo Giant.
One Milo Giant wood.
One simple stroke steel.
One Vaneless geared.
One Waupun grinding mill.
Four steel towers.

Horicon Wind Mill Co., Horicon, Wis.

Two wind mills.

Blucher & Gibbs Manufacturing Co., Milwaukee, Wis.

12 Walking plows.
34 Pumps.
6 Hay carriers, wood and steel track.
2 Steel harrows.
2 Spray pumps.
2 Bundles rubber hose.

G. W. Paddock, Beaver Dam, Wis.

Two Harrows.

Deere & Co., Moline, Ill.

Fifteen plows.
Four sulky plows.
One harrow.
Three cultivators.
Two potato diggers.

Monitor Manufacturing Co., Minneapolis, Minn.

One grain hoe drill.
One grain shoe press drill.
One grain shoe press drill.
One broadcast seeder.

A. M. Davis, Madison, Wis.

Two disc harrows.
One spring tooth harrow.
Two hay rakes.

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Economist Plow Co., South Bend, Ind.

Three solid comfort gang plows.
Four sulky plows.

Mohland & Co., Sigourney, Iowa.

Giant grubbers.

Van Brunt & Wilkins, Horicon, Wis.

Two drills.
One seeder.

W. S. Hazen, Ripon, Wis.

One steel tooth shifting harrow.
One steel shelled roller.

The John Dodd Manufacturing Co., Dayton, Ohio.

One disc harrow, steel.
One hay tedder.
Five different hay rakes.

Bradley Manufacturing Co., Chicago, Ill.

Y. No. 45, wood beam stubble plow.
Y. No. 20½, sod and stubble plow.
No. 545, stubble plow, steel beam.
No. 519½, sod and stubble plow, steel beam.
No. 521, sod and stubble plow.
No. Y. 77, sod and stubble plow.
One walking gang 12 inch stubble square corner sulky plow, 16 inch stubble.
One perfection 14 inch sulky plow.
One Orchard gang three furrow plow.
One No. 20 Bradley chill plow.
One No. 40 Bradley chill plow.
One jointer, 8 wheel chill plow.
One iron beam single shovel plow.
One iron beam double shovel plow.
One iron beam five tooth cultivator.
One No. 2 Bradley rake, 8 feet, combined steel wheels.
One steel lever harrow, two section, 64 teeth, new style.
One No. 2 Bradley disc harrow.
Twelve 16 inch discs.
One potato digger.
One 13 inch Bradley colter.
One iron beam Bradley walking cultivator.
One iron beam Bradley walking cultivator, steel wheels.
One Bradley Vulcan confined cultivator, iron frame and steel wheels.
One Bradley riding disc cultivator, steel wheels with six 16 inch adjustible discs.
One Captor drill.

Smalley Manufacturing Co., Manitowoc, Wis.

One No. 20 feed cutter.
One No. 14 feed cutter.
One No. 10 feed cutter.
One No. 0 feed cutter.
One electric root cutter.
One No. 18 feed cutter.
One No. 12 feed cutter.
One No. 9 feed cutter.
One No. 00 feed cutter.

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J. I. Case Plow Works, Racine, Wis.

One No. 14½ Aac. steel beam plow.
One No. 84½ G. M. steel beam plow.
One No. 134½ A. S. stubble wood beam plow.
C. P. 3½ A. sod and stubble steel beam plow.
No. 3 chllled plow.
16 inch Brush Breaker plow.
One No. 94 Aac. wood beam plow.
One No. 84 G. M. wood beam plow.
C. P. 3 A. sod and stubble wood beam plow.
14 inch Belle City Breaker plow.
14-inch timber plow.
60-inch tooth wood frame lever ha row.
64-inch tooth steel frame lever ha row.
One old reliable 4 shovel wide or nar row trace riding cultivator.
One old reliable spring tooth riding cultivator.
One combined corn chief 6 shovel riding cultivator.

O. C. Little, Menasha, Wis.

Two of O. C. Little's separable pulleys.
Three of O. C. Little's separable collars.

F. C. Austin Mfgr. Co., Chicago, Ill.

Road machines,

L. P. Rowlins, Beloit, Wis.

Farm gate.
Double tree hook.

Your superintendent would recommend, that as soon as possible, the society erect a building, not less than two hundred feet in length, and fifty or sixty feet in width, and so constructed that the smaller exhibits can be shown more compactly than when scattered at various points over the grounds.

Exhibitors would gladly pay a fair rental for space in such a building, and in time it would become a source of revenue to the society.

All of which is respectfully submitted.

T. L. NEWTON,
Superintendent Machinery Department.

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DEPARTMENT K.

To the Executive Board of Wisconsin State Agricultural Society:

GENTLEMEN—The exhibit in Manufacturers' Department was large though not in so great variety as in some former exhibits. While the splendid quarters for exhibition were duly appreciated the condition of the roads from the city to the grounds were such that several firms, wishing to exhibit heavy articles (having space allotted them some time before the opening) were forced to abandon the project. Hardware and crockery not represented. In class 56, Carriage Department, were exhibited some of the finer class of expensive goods, several new styles not provided for in the list. Would suggest adding to the list best Landau or Rockaway, best Coach, best Brougham, best Victoria, best half top Cabriolet, best Spider Phæton, best Trap, best Buckboard, two or three seats, best Box Cart, best Pony Cart. Would also suggest change in seventeenth line to Top Surry instead of Surrey Wagon, twentieth line insert Express Wagon instead of Spring Freight wagon. The Standard Oil Company made an attractive exhibit, nothing in the list touching their case. I think the above suggestions are in the interest of the public to encourage manufactures and may perhaps be of some assistance to my successors in office. Very truly,

H. D. HITT,
Superintendent,

DEPARTMENT M.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN—The articles exhibited in this department at our last fair exceeded in number and quality those of any preceding year. The exhibits in all of the classes were very large except in canned goods; perhaps this was due

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to the scarcity of fruit as much as to the fact that no special premiums were offered as an inducement to exhibitor

Class 70—work of boys and girls—was much larger and more creditable in every way than ever before, yet the exhibit was not what it ought to have been.

The oratorical contest proved an attractive feature, and I would recommend its continuance if a place suitable for holding it can be provided. These contests form a prominent feature at our county fairs, and serve as a stimulus to our young people to perfect themselves in the art of oratory.

Too much cannot be said in commendation of the new and commodious building provided for fine arts and women's work. It was an attraction of itself, and was in every way so well adapted to the purpose for which it was designed that it was a pleasure to put up and arrange exhibits.

A large expense is annually incurred in this department for the rental of show cases that I hope will be obviated as soon as the finances of the society will warrant their being purchased and kept in the building. A permanent cupboard provided with glass doors, for bread and cake would greatly facilitate caring for these exhibits, and would be much better adapted for them than the show cases we are obliged to use.

Respectfully submitted,

VIE H. CAMPBELL,

Superintendent.

FORAGE DEPARTMENT.

To the Executive Board of the Wisconsin State Agricultural Society.

GENTLEMEN—At the state fair held at Milwaukee, from September 12 to 15, 1892, there was used in the forage

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department 68 tons 115 pounds of hay and straw. Of this 33 tons 790 pounds was hay, costing $363.27, an average of $10.87 per ton.

The amount of straw used was 34 tons 1325 pounds, costing $7.00 per ton, $242.63.

Total amount paid for forage, $605.90.

Respectfully,

C. T. FISHER.
Superintendent.

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ANNUAL CONVENTION

OF THE

WISCONSIN STATE AGRICULTURAL SOCIETY.

February 7th, 1893, 7:30 P. M.

President Parkinson in the chair.

Exercises were opened by music, by Mr. C. C. Eaton, of Columbus, Wis., soloist, accompanied by Mrs. Eaton at the organ.

PRESIDENT PARKINSON'S ADDRESS.

Members of the Convention, Ladies and Gentlemen: The society under whose auspices we convene was organized more than forty years ago. Except during the War of the Rebellion when its grounds and buildings were required by the exigencies of the state for military purposes, the society has held its annual exhibitions, published and distributed its reports, disseminating throughout the globe the fullest information concerning the resources and advantages of our young but great and growing commonwealth.

In the act of incorporation the objects of the society are declared to be "to promote and improve the condition of agriculture, horticulture and the mechanical, manufacturing and household arts." Never once losing sight of the purposes of its organization the State Agricultural Society has disbursed in premiums among the people more than a half million dollars for the encouragement and betterment of the various material industries which came within the

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scope of its special work. Nor has it ever defaulted in the payments of its awards. During the existence of the society a million people and more have visited its annual fairs. Forty thousand were in attendance at the fair last September upon a single day. They came from every quarter of the state, many from beyond its limits. No one ever saw in this state and rarely elsewhere so superb a collection of valuable animals, articles and products; nor such an aggregation of intelligent exhibitors and visitors.

It has been intimated in certain quarters that the mission of the society is ended. If so, let me ask as did an eloquent speaker from this platform one year ago: Why were there forty thousand people seen crowding through the gates at the last fair and at every fair for years? Were they there to protest against the holding of the fair, paying their money for that patriotic purpose like that good soul who paid his way to see the performance of the Black Crook that he might assail it without depending upon hearsay or his imagination for his facts?

The people flock in thousands to the annual exhibitions of this society because they derive both profit and pleasure in so doing. Each of the several departments of the fair finds its hosts of admirers, and this is well. Some are interested in this feature, others in that. This diversity of taste lies at the very bottom of our material prosperity, our social and intellectual progress. Some go to see the fruit and flowers; some to see the wonderful cattle, others the sheep and the swine, but a few, of course, never go to see the horse trot, yet if you will shadow these few through a day at the fair you will not fail to observe them rounding up in the vicinity of the "grand stand" about two o'clock in the afternoon, and not infrequently hurrahing with enthusiasm at every close finish. I am over-tempted to relate a story told recently by a gifted friend. On one of these exciting occasions he says he saw a streak of sinewy horse-flesh go under the wire, winning a race by half a neck in a whirlwind of cheers, amid which an elderly clergyman by his side jumped up with a yell that could be heard a mile and then sat down on his silk hat, quivering with de-

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light. It is interesting though pitiable at times to note how dignity will forget itself when it least becomes it.

During the summer of '91 your speaker was over-persuaded to join the company of twenty-five or thirty gentlemen—mainly judges and professors of this city, who were going to the Independence trotting meeting. Upon those grounds, near the finish or home-stretch, a slender wooden structure had been erected intended for the accommodation of spectators. The building was provided with three decks but was unfinished and was declared by the proprietor of the grounds unsafe and the people were warned to keep out of it. The race between Nancy Hanks, Allerton and Margaret S was on. Even standing room was at a premium. Despite all warning hundreds of persons crowded the decks of the condemned structure. Two or three of our party climbed into the middle apartment in the rush. One of these a well-known and distinguished professional gentleman of severe morals and great dignity. Just at the moment of one of the "most exciting finishes known to turf history" the upper deck of this dead-fall collapsed with 300 people on board, falling with a frightful crash upon those below. Our friend was unfortunately caught beneath some heavy timbers, and when first reached was foned to be fearfully injured and bleeding profusely. As the cruel load was lifted from his bruised body, his first articulation was, "Boys, did Nancy take that last heat?"

One excellent feature of our great fairs is the opportunity it affords the over-worked and truly good members of society of witnessing the *trials of speed* without undergoing the odium of attending a horse race. Like the parent who goes to the menagerie with his boy but will never admit that he cares a "shuck" about the circus.

Early in the history of the society the legislature manifested its appreciation of the benefits accruing to the state through the labors of the association by providing for the printing and in part, the distribution of the Transactions of the society. Nearly thirty years ago by act of the legislature the society was granted the free use of the spacious rooms which it now occupies in this Capitol. Several

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years ago the legislature directed the secretary of state to furnish the society with all necessary stationery and postage, the same as other offices in the capitol are supplied. Under certain restrictions the society annually receives the sum of $4,000 from the state and ten per cent. upon its paid premiums.

I mention these facts to show that in a measure, at least, the society, from the first, has been regarded a state institution, the child of the state. If these manifestations of parental regard have only occurred in small ways and in spasmodic efforts; if Wisconsin has done less for her State Agricultural Society than any of her adjoining sister states, it is chiefly because the Wisconsin society has never until recently felt the need of any considerable state help. Could the society have renewed indefinitely its lease of the Cold Spring grounds in Milwaukee it would have been independent and always full-handed, provided it had no ambition to creditably compete in its exhibitions with the societies of other states. The sudden rise in real estate values in Milwaukee put the Cold Spring property upon the open market. but at a price far beyond the ability of the society to purchase. Besides the old property so long used was wholly inadequate for the further use of the society because of its too limited area. This is without question.

Upon notice two years ago that a renewal of the lease could not be had the necessity of finding a new home for the society became imperative. Perhaps this emergency should have been foreseen years ago and provided for when cheaper lands were obtainable. However, we haven't it in our heart to criticise the wisdom or lack of wisdom of our predecessors. We would rather doff our hats in public acknowledgment of their unrequited labors in behalf of the society and more still in behalf of the state.

Proud am I of the achievements of the society. As the child of the state, it has ever striven with filial regard and zeal to do what would most advance the interests of the commonwealth. Scarcely any other agency has done so much to attract to Wisconsin its million and a half of contented, prosperous and intelligent people. The knowledge

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of our varied and wonderful resources contained in the numerous reports and publications which have been prepared and published by this society has found its way to every civilized people of the globe. Our annual exhibitions have attracted the attention and excited the admiration of thousands. No state in the wide union has been more benefited by the labors of its chief agricultural society, for the very palpable reason that no state has had more to advertise. Within the limits of no other state can there be found a greater diversity of resources, a greater variety of material interests. As affecting these varied interests the work of the society has never been confined in its operation and influence to any favored locality.

For several years past the liberal prizes for the best county exhibits have been awarded to counties in northern Wisconsin. I recall the victories in recent years of Langade, Barron and Washburn counties for the best displays of vegetables, grains and grasses. Through such agencies as these the wonderful advantages of that region, hitherto but half understood, are fast becoming known to those seeking new and desirable homes. The time is not far distant when the tidy, well-kept farms, the neat homes, the frugal and happy people, which distinguish Sheboygan, Manitowoc and other lake-shore counties will find their perfect counter part in every county of northern Wisconsin. The returning pilgrimage of disappointed home seekers from the treeless lands and blizzard-stricken regions of the Dakotas and Minnesota has begun. These are finding desirable homes, productive lands and withal constant employment the year round in northern Wisconsin. This society has done much, is doing much and hopes to do still more to develop and encourage the agricultural and all other advantages of this portion of the state and make them known to the world.

The membership of the society is confined to no locality but comes from all sections and is fairly representative of all honorable vocations. Agriculture is the basis of all wealth. Upon it nearly every other worthy pursuit de-

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pends for its prosperity. When the state contributes aid to this society it does so out of a spirit of enlightened selfishness. It is like bread cast upon the waters. It will return after many days. Least of all can such appropriations be called class legislation. This charge is the cunning devise of the demagogue or the cheese-parer.

At this point I must address myself especially to members of the legislature now in session. In so doing I shall endeaver to speak frankly and I hope clearly, without innuendo or the slightest concealment of purpose or fact.

Through the action of the legislature at its session of 1891 the land commissioners were authorized, subject to the approval of the Governor, to loan the society a sum of money to enable it to purchase a new state fair site within ten miles of the court house of Milwaukee county, the loan of the state to be secured by a first mortgage upon the lands so to be purchased and to be limited to an amount equal to two-thirds of the purchase price of said lands. Under the authority of the act of 1891, the present state fair park was purchased, consisting of 160 acres of land and located within five miles of the county court house. The purchase price of the new site was $136,000, being $850 per acre, and in conformity to the act of the legislature referred to the land commissioners, acting with the Governor, after a careful inspection of the property, loaned the society $90,666, two-thirds of the purchase price, the owner of the land accepting a second mortgage for the other one-third. During the early part of the past summer the society sold, subject to existing encumberances, twenty-five acres for $1,164 per acre, which yielded the society upon this fraction a profit of $7,000 on the original investment. This transaction discloses to some extent the worth of the original purchase and its rapidly enhancing value.

After the purchase of its new site the society found itself the possessor of a most valuable property but its members were at their wits end to devise the ways and means to properly equip the new grounds for the use of our annual fair. From the sale of the old fair grounds in this city the society realized twenty thousand dollars; from the citizens

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of Milwaukee by way of gifts and bonuses, $50,000; from the profit from sale of a strip of the new grounds above mentioned, $7,000; and from other sources about $5,000, making in all an equipment fund of something more than $80,000.

It was hoped with that sum of money the society would be able to fit the new grounds. Our friends everywhere were insisting that the fair of 1892 should be held upon the new site. This demand received additional force from the fact that no fair would probably be held during the year 1893 in consequence of the Columbian exposition. At all events the executive board was directed to commence at once the work of preparing the new grounds for the fair of 1892. Those who were directly charged with the work were confronted with innumerable difficulties from the very outset. The greatest embarrassment arose from the lack of time, which grew more serious from day to day and week to week as the memorable rainy season of 1892 advanced. Though ready to commence work in April we were unable to do anything until July on account of wet weather. This condition of things multiplied our difficulties.

The fair had by this time been extensively advertised and its patrons could not be disappointed. Our efforts to complete the work were redoubled. Owing to the shortness of the season, in consequence of continuous rains, labor became very high and scarce, almost beyond precedent. From being so pinched for time the expenses of our work were increased enormously over and above what they would otherwise have been. For weeks toward the end of the season from 300 to 500 workmen were constantly employed, and the labor performed was prodigious. With the means at command no similar work was ever pushed with greater vigor. However, but for the rainy week immediately preceding the fair, all would have been in readiness. As it was, the completion of the race track was greatly interfered with, and in consequence the receipts seriously curtailed, at least not less than $10,000. Owing to the in-

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creased expense of our work caused by the rainy season, the society lost an additional $10,000.

Owing to the difficulties and embarrassments to which I have alluded, the society is in debt about $27,000, besides the interest due upon the loan from the state and upon the second mortgage to the former owners of the purchased site. Besides this, the society needs from $10,000 to $20,000 to enable it to complete the work upon the new grounds and to protect and preserve that already done.

Without taking into account a single improvement, the state fair grounds have more than doubled in value since the loan was secured upon them from the state. This will be admitted by every person at all familiar with the values of real estate in that vicinity, and is further proved by sales of adjoining acreage within the past two months. The state's interest in these lands is absolutely safe, regardless of more than a $100,000 in substantial permanent improvements since placed upon them by the society. To put it differently, yet correctly, the society's property is worth many thousand dollars more than the price paid for it for any purpose.

It is idle, however, to dwell upon the speculative value of this property. With its elaborate equipment, its spacious and commodious buildings designed for their special purposes, its copious wells and pumping arrangements, its race course and amphitheatre surpassed by none in the west, save those of Washington Park, this newly acquired property is an hundred times more valuable for state fair purposes to which it has been already dedicated than any other purpose to which it can possibly be applied. The thought of it for any other use seems sordid if not sacriligious. The thousands who have visited these grounds, without a single dissenting voice, will bear witness to the wonderful adaptability of the new grounds to the special purpose for which they are required. No similar society in the great west, at least, possesses a tract of land more perfectly favored by nature for the uses of its annual fair. Owing to the undulating character of the grounds, we may have a faultless system of drainage. We have an exhaust-

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less supply of water from flowing wells, and withal an abundance of delightful shade. Our various buildings and other appartments have been constructed after the most approved modern designs, so that beyond doubt, with a very small additional expenditure of money we may claim for our new state fair site a place among the best in America; a consummation in which every patriotic citizen feels a commendable pride.

This society has never aimed at the mere accumulation of money. Such has never been its chief thought or purpose. When its fairs have brought a considerable surplus to its treasury, the policy of the society has always been to correspondingly increase its cash premiums. Only at short intervals during its forty-two years existence has the society ever had but a single salaried officer and that one has received but a scanty remuneration for his arduous service.

In coming before the legislature asking for such aid as will enable the society to discharge its thirty-thousand dollars overdue indebtedness and to complete the work upon its new grounds, we come in no suppliant mood. The just claim of this society is found in its long years of patriotic, yet unrecompensed service to the state and its people. No well-informed citizen can be found to protest against reasonable state aid. A vast majority of the people, regardless of profession or vocation, demand it in the interest of no class but all classes. Concede for argument's sake that this claim is urged almost wholly by the farmers of the state. What of it? One-third of our population is engaged in agricultural pursuits while the other two thirds are largely dependent upon agricultural prosperity for their own. This is a trite statement and goes without saying. Nine-tenths of the laws passed this winter, like every winter, will not in the remotest degree touch the question of agricultural advancement or the material prosperity of the state. It is high time it would seem that those having a common interest and who in a large measure pay the taxes should be less graciously unmindful of their own immediate welfare. Is it not high time that those who think alike, feel alike and who are interested alike, should act

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alike and with unanimity in matters of such vital mutual concern?

Many wise and patriotic citizens, profoundly interested in the agricultural prosperity of the state, favor the establishment of an Agricultural Bureau. The movement is urged in the interest of greater economy, more practical results and withal a more intelligent policy of agricultural encouragement. The plan contemplates placing under one head or commission the several bureaus, societies and agencies having kindred aims and purposes, now maintained wholly or in part by the state. Such a plan has been adopted with very satisfactory results in many of the states and has received the earnest approval of Gov. Flower of New York in his last message to the legislature of that state. From this able public document I desire to make a liberal quotation, not because I wish to urge the adoption of his elaborate plan by our own state at this time, but chiefly for the purpose of showing, by comparison, how much more is done for agricultural advancement in other states than in our own. Gov. Flower says:

"It has long been the policy of the state to give legitimate encouragement to agriculture by the enactment of wise laws and the appropriation of public money. Such legislation, it will be conceded, should be carefully drafted with a sole view of subserving a public purpose. One-fourth of the population of the state is directly dependent upon agriculture as a means of support, and the remaining three-fourths are vitally interested in its prosperity. Whatever can be wisely done by legislation to promote this prosperity will meet the approval of the whole people. In ten years upwards of a million dollars has been appropriated for agricultural purposes. A state experiment station has been established to encourage scientific and economical methods of farming; a state dairy commission has been created to prevent deception in dairy products and to encourage dairy farming; a meteorological bureau has been established to issue periodic bulletin of crop and weather reports; appropriations have been given to state and local fairs, to farmers' institutes and for the prevention of contagious diseases among cattle.

The people will not begrudge this large expenditure and liberal state aid if the results are sufficiently commensurate to the outlay. The present tendency, however, of agricultural legislation seems to be marked by somewhat spasmodic and often misdirected efforts. It has become pretty much a matter of legislative log-rolling. There is exhibited no well-defined

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or practical policy. Legislative energy and disposition are not concentrated so as to produce the best results. At the last legislative session $279,000 was appropriated in different measures for agricultural purposes, and the mere statement of the several objects of expenditure indicates the random and heterogeneous character of the legislation, viz: $20,000 to the New York Agricultural Society for premiums at the state fair; $20,000 to the same society for distribution to county agricultural societies and to the American Institute for premiums; $8,000 each to the New York and New England Agricultuaal Society, the Western New York Agricultural Society, and the Inter-State fair; $40,000 to the State Agricultural Experiment Station at Geneva; $18,500 additional to this station for various purposes; $95,000 to the dairy commissioner; $5,000 additional to the dairy commissioner for the employment of experts; $4,500 for the State Meteorological Bureau; $15,000 for the maintenance of farmers' institutes under the direction of the State Agricultural Society; $5,000 for promoting and extending dairy knowledge and science, to be expended under the direction of the State Dairymen's Association; and $32,444 to the State Agricultural Society out of the receipts from racing associations."

From the foregoing Gov. Flower reaches the following conclusions:

"The alternative which is offered is practically a continuance of these heterogeneous and conflicting efforts involving each year additional expenses, or the establishment of a well equipped agricultural bureau which will voice the actual needs of the state and give intelligent impetus to agricultural development. Although I share the popular distrust of new governmental bureaus I am convinced that in this case it would promote the interests of economy and efficiency. It will be a consolidation rather than a creation." * * *

He then adds:

"Agricultural prosperity means general prosperity. But the tax payer in the cities as well as on the farms wants to see public money expended so as to produce the best results, and with miscellaneous appropriations aggregating nearly $300,000 per annum for agricultural purposes, it would seem as though prudence and forsight both demanded the adoption of a comprehensive, consistent, and intelligent policy. I am convinced that for considerably less than is now expended annually, much more satisfactory results could be obtained by the application of systematic business methods under intelligent and comprehensive direction. and I submit to the consideration of the legislature whether the establishment of an agricultural bureau with ample powers is not the most feasible means to this end."

These suggestions from this eminent source are worthy of careful consideration for the purpose named.

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In conclusion permit me to say that the legislation which this society seeks is set forth in a bill now pending in the legislature. We ask for no appropriation, but a loan from the state of money sufficient to enable us to settle our overdue equipment bills and complete the unfinished work upon the grounds. We ask the state to assume no risks, for our security is abundant. This will not be denied by anyone when it is understood that upon the lands now mortgaged to the state the society has since placed nearly one hundred and twenty thousand dollars in substantial permanent improvements. The bill now pending simply makes available the funds of the society to secure the needed loan. The only feature of the bill which partakes of the character of a gratuity is that which proivdes for a remission of the interest for a term of five years. In view of the character of this society in its intimate relationship to the state, we scarcely think anyone will object to that provision. In proposing this measure we have striven to our utmost to offer the slightest possible embarrassment to those who are at present charged with the administration of the state's affairs. In this address, which partakes largely of the character of a report, we have aimed to speak candidly and plainly. We confidently leave our case with those in authority, trusting to their wisdom for such favorable action in the premises as to them shall appear honorable and right.

It is very much regretted that we are unable to publish the address of Governor Geo. W. Peck, delivered at this session. It was delivered without notes, and the unexpected absence of the reporter at the time, when it was too late to supply his place, is our explanation of the omission. —SECRETARY.

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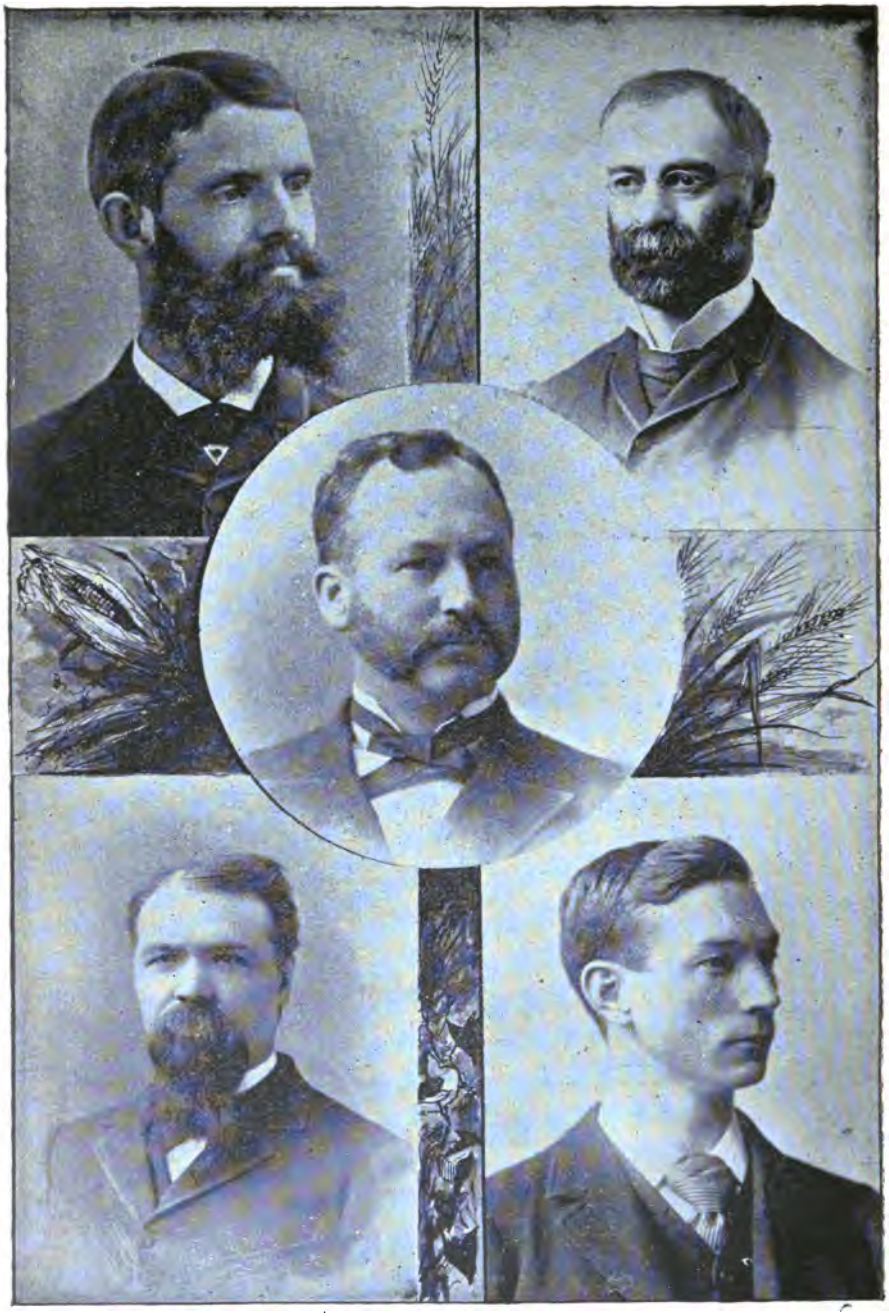

Professors Agricultural College, University of Wisconsin.

E. S. Goff.
F. H. King.

W. A. Henry.

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J. A. Craig.

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TENDENCY IN AGRICULTURE.

Address of President C. K. ADAMS before the State Agricultural Society at Madison, February 7th. 1893.

Mr. President, Gentlemen of the State Agricultural Society, Ladies and Gentlemen:—I cannot profess to have made any such effort to be here tonight as was made last year by his excellency, Governor Peck. On looking over the proceedings of last year, I learn that the future historian of this state will have the very best authority for saying that Governor Peck walked all the way from Washington to Madison, a distance of some 1,100 miles, for the purpose of being present at your annual meeting and addressing you. I can only account for this remarkable pedestrian feat on the supposition that he was already in training for the still more remarkable "run" that he made in the following summer and autumn. I am not in training for honors of any kind, and I respond to the invitation with which you have honored me because I have a large interest in the success of agriculture and am connected with an institution in which much is done for the furtherance of agricultural success.

I am a firm believer that the present has its roots in the past. I believe that we are today what we are simply because our fathers were what they were before us. I believe that the institutions of today have grown directly from the institutions which they have succeeded. It has occurred to me, therefore, that in agriculture as in any other subject, we may gain some advantage by looking over the past and noticing some of the tendencies that have been observable during the last hundred years. I think we shall find that two revolutions have been going on, that while one revolution has exerted an indirect influence upon agricultural methods and results; the other, as I think we shall see, has unconsciously been undertaken

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for the purpose of counteracting some of the influences of the first revolution.

The first of these revolutions is that which has taken place in the methods of transportation. There are few things more interesting than the evolution of modern methods of transporting the products of the land. It is only a little more than one hundred years since Arthur Young described with minuteness the methods of transportation in England. His observations were in the days before the old road provided by nature had given away to those magnificent thoroughfares that are the admiration and dispair of American road builders. Goods were then transported upon the backs of mules and horses from Manchester and Liverpool to London. They made a kind of saddle, called a crook, which resembled the American sawbuck, as much as anything that I can think of, and placed it upon the backs of mules and horses. These were filled with the goods that were to be transported. The mishaps which befell Arthur Young in the course of his journeyings were perhaps even worse than those which might befall an American traveler to-day should he undertake, in the spring of the year, to convey heavy loads in an ordinary conveyance along the valleys of the Miami or the Wabash. It is related that George III was once upset by getting his carriage into a slough in going from one palace to another in the suburbs of London.

Then came the era of road building. Metcalf and Telford began a network of roads, which were finally spread over the whole of Great Britain, and within less than fifty years a traveler could go in any part of the island, from one village to another, without traversing a foot of road that was not at least equal to the modern American pavement. I have seen a single horse, on an ordinary English road, haul with ease a load of twenty-seven barrels of flour. The making of roads by which this was possible was the first step in the great revolution to which I have referred, When a farmer had to convey his product upon the back of a horse or a mule, every farmer was obliged to raise whatever was necessary for the sustenance of his family. As soon as

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good roads were constructed every farmer could exchange products with his fellow farmer a score or a hundred miles away, and thus the process of exchange was established.

Then came the era of canals. The Duke of Bridgewater, a name which always seemed to me rather approriate for his vocation, devoted himself particularly to the beginning of a great movement which ended in the construction of great waterways that should connect the head waters of the principal rivers in England. These waterways made it possible for the farmers to extend the range of their intercourse, and it was found possible for those who lived in Yorkshire or Northumberland easily to exchange products with the people of Kent and Cornwall.

Then came the age of railroads. The era of railroad building was between 1840 and 1850. Since that time, of course, vast numbers of roads have been projected and completed, but during the period which I have mentioned those great lines were constructed which made it possible to move rapidly and cheaply the products of the island from one point to another. This of course led to specialization in agriculture. Those soils that were best adapted to a particular grain or product of any kind were devoted to that particular use; and the products of those soils were exchanged with the products of other soils in the neighborhood or far away. Thus it was that the methods of agriculture gradually underwent a change in all parts of Great Britain.

Now what I have said of Great Britain was taking place in all parts of the civilized world. In France, in Germany, in Italy, and in the eastern part of the United States, railroads were making it comparatively easy to distribute the products of the soil wherever they might be desired.

Nor was this all. The application of steam to navigation was scarcely behind the application of steam to locomotion upon land. If I remember aright, it was during the first year of the reign of Queen Victoria, that is to say in 1837, that the first steamer crossed the Atlantic, It was then, for the first time, demonstrated that it was practicable to construct a vessel which could at once carry coal enough

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for locomotion and freight enough to pay the expense of the passage. The significance of this change was in the fact that it came soon to be seen that the farmers of Europe were to come into competition more or less actively with the farmers of the United States. And, as frontiersmen began to push their way into the far west, the problem became one of great interest and importance; whether upon the cheap lands of the western prairies crops could not be raised and transported by modern methods at such a rate as to reduce the price of the same crops upon the other side of the Atlantic. Various improvements accelerated this result. The invention of Bessemer steel had a very powerful influence in this direction. The simple device of a scientific metallurgist by which he determined in his laboratory how it would be possible to change the amount of carbon in a given amount of iron increased almost indefinitely what may be called the longevity of a railroad track. Within the last twenty-five years, more particularly still within the last ten years, it has been found possible for a few cents, to take a barrel of flour at Minneapolis and transport it to Liverpool. The wheat from which the Minneapolis flour was made grew upon lands in the far northwest which were valued at most at only a few dollars an acre. It came within direct competition with grain grown upon lands in Europe, which perhaps had been valued at several hundred dollars an acre.

The same process was going on in other parts of the world. The great wheat fields of India were made accessible to the markets of Europe in the same way. Thus vast stretches of wheat land in southern Russia poured their treasures into the granaries of Europe at a price which defied all the competition of Germany, France and Italy. Modern methods also made it possible to supply the meat markets of Europe in the same way. Two years ago in the Smithfield market in London, I saw the carcasses of mutton still in the same frozen condition in which they were said to have been put aboard vessels in Australia.

These inventions and improvements almost literally made everybody the neighbor of everybody else; and cheap lands,

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even in the remotest parts of the world, have been brought within the last hundred years, as never before, into direct competition with the dearer lands of England, France, Germany, New England, New York and our other eastern states. This revolution has made it necessary to study anew the conditions of successful agriculture. Fields have had to be devoted to new uses, and the intellectual resources of the farmer have been put to the test to know how he could counteract, and, if possible, even turn to advantage, these new conditions. It is not singular, therefore, that new processes have been resorted to and new methods have been devised. The conviction very naturally became rife in the old world, and it soon came to be asserted in the older parts of the new world, that the farmer could not compete with these conditions, unless he could devise means by which the soils could be made to yield larger returns; and this general conviction was the parent of what may be called modern methods of agriculture.

Up to the beginning of this century improvements in agriculture had never assumed what may be termed a scientific form. There had been methods indeed by which the fertility of the soil in a general way had been maintained. Anybody that is familiar with the Bucolics of Virgil, or the writings of Columella, or the letters of Cicero, knows that the Romans were not without their knowledge of the ways by which the soil could be kept from deterioration. Throughout the middle ages the soils belonging to the monastic institutions were so skillfully managed as to preserve their fertility; but still, speaking in general terms, it was not until the very middle of what I have termed the revolution in transportation, that a very decided change took place in methods of agriculture.

This change, which may be called the beginning of the second revolution, was owing, probably more than to any other cause, to the publication of one very remarkable book. It was in the year 1843 that the German chemist, Liebig, published his volume entitled Chemistry as Applied to Agriculture. The central thought of this book was that by knowing the chemical constituents of the soil the farmer might

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either by natural or artificial fertilizers not only keep the fertility of the soil unimpaired, but even very greatly increase it. It was shown how in many cases only very slight additions to the soil were necessary to produce the desired result. It is not easy for us now to understand the influence of this epoch-making book. It not only quickened the thoughts of those interested in agriculture everywhere, but it led to the establishment of institutions for the prosecution of investigations with a view to ascertaining under just what conditions the benefits here claimed could be derived.

Look for a moment at what was done in England. Agricultural societies had existed there from the beginning of the century. These societies now for the first time adopted the habit of employing chemists for the purpose of prosecuting investigations and publishing the results in the interest of agriculture. Liebig was invited over to England. About this time the very celebrated agricultural experiment station was established by Mr. John B. Lawes at Rothamsted. This agricultural enthusiast called to his service Dr. Gilbert, the professor of agricultural chemistry at Magdalen college, Oxford. The establishment of Lawes and Gilbert soon became known throughout the world, and became celebrated as perhaps the most successful experiment station in existence. They determined as early as 1851 to conduct their experiments in a careful and systematic manner. Their fields were divided in such a way that there should be every manner of fertilization then known to agricultural science. Ten distinct fertilizers were used. The fields were first divided into ten strips, and these strips were then divided transversely in such a way as to form 100 squares; and these strips of land were fertilized each by one distinct fertilizer, and when the ten strips had been thus fertilized the plan was to turn across the field and use the same fertilizers in the same way until all had been twice covered. In this way, you will see, there was one square in the field that was fertilized with every possible combination; that is, with every one fertilizer together with every other. The plan was not

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only to apply the fertilizers in this way once, but to continue to apply them in this way for at least fifty years.

Now the results of these experiments have been probably the most valuable that have ever been published. I ought perhaps to have added that the policy was adopted of raising upon squares the same crops for a continuous number of years. Two years ago, when I had the pleasure of visiting Rothamsted, I was assured by Dr. Gilbert that every one of these squares had raised the same crops for more than forty years; and he showed me tables demonstrating the fertilization each square had received; the nature and amount of the fertilizer applied, and the amount of crop realized. The results of these experiments were a revolution to the farmers of England, and they may be said to have revolutionized the farming industry. By the application of natural and artificial fertilizers it has not been difficult to increase the crops, even where crops upon the same soil have been continuous by more than threefold. The more particular significance of these experiments is illustrated by the result of experiments in the growth of wheat. The average crop of wheat for thirty years upon the unfertilized soils where these experiments were conducted was about eleven bushels per acre; the average yield during the last eight years has been thirty-three and one-half bushels per acre, while on those plats on which the fertilization seems to have been best adapted to the results, the yield has been at the rate of more than fifty-three bushels per acre.

Similar results have been reached in the treating of grass lands. It has been found that the most skillful farming, without systematic and what may be called scientific enriching of the soil, will not produce an average yield continuously of more than 2,300 pounds of hay per acre; while the judicious use of fertilizers whose ingredients have been determined by an analysis of the soil has brought the crop up to a continuous product of 6,400 pounds per acre.

I shall not soon forget the impression I received on looking at a meadow stretching down from a manor house of Sir John Lawes; for the owner of this estate has now been knighted

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for his contributions to agriculture, now constituting a part of his experimental estate. This meadow has been untouched by a plowshare since the time of Queen Elizabeth. After being used as a meadow for three hundred years it had been subjected to the same systematic treatment in the matter of fertilizers as the other part of the estate, and those parts of the soil that have received the fertilizers best adapted to the production of hay now produce from three to four tons of hay per acre every year.

Now it is not singular that these experiments have revolutionized agriculture in England. The average yield of wheat in England fifty years ago was about ten bushels per acre. According to the last agricultural reports it was thirty-one and one-half bushels per acre, or a little more than three fold what it was upon the same soil fifty years ago. I cannot go into a full description as I should be glad to do of the changes that have been brought about in Germany and in France. Agricultural schools and agricultural experiment stations have been multiplied here as no where else in the world. Many of the universities in Germany have their agricultural colleges and every German state has its agricultural schools. I shall not describe these in detail but I will take the liberty of quoting from an address I delivered before the New York Agricultural society in 1886, which will give you some idea of the activity of Germany in the interests of agriculture :

"Look for a moment at a mere catalogue of the schools that have been established in Germany for the the furthering of these purposes. Prussia alone has four higher agricultural colleges, with about eighty professorships. She has forty-one lesser schools, all connected with model farms; she has five special schools for the cultivation of meadows and the scientific study of irrigation; she has one special school for the reclamation of swamp lands; she has two special schools for industrial agricultural; she has one school for horseshoeing; one each for silk raising, for the raising of bees, and the raising of fish. She has twenty special laboratories and conservatories for the education of gardeners; she has three higher colleges and twenty sec-

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ondary schools in which the culture of the grape vine is made a specialty. All of these schools are connected with model farms for a practical education of students. One of them, that of the academy of Proskau, contains no less than 2,450 acres of farming land and 14,700 acres of forests.

"The example of Prussia has been followed by the smaller German States. The kingdom of Bavaria, though scarcely more than half the size of the state of New York, has twenty-six agricultural colleges besides 259 associations for the advancement of agricultural scientific knowledge. Besides these, the celebrated Polytechnic School of Munich, contains a separate department for higher agricultural instruction. The little kingdom of Wurtemberg, so small as scarcely to reveal itself on our school atlases, has sixteen colleges and seventy-six agricultural associations. Among these is the celebrated school at Hohenheim, which long since gained European fame. Saxony, with its dense population of two million, besides the agricultural departments of the University of Leipsic already mentioned, has four higher colleges and twenty schools, one veterinary college and a large number of agricultural associations and evening schools for the instruction of farmers' sons. The Grand Dutchy of Baden, though having a population of only a little more than a million, sustains not only an agricultural college connected with the University of Heidelburg but also thirteen other colleges, four schools for gardening and forestry, one school for horse-shoeing, one school for irrigation and draining, and seventy-seven agricultural associations. Hesse Darmstadt, whose population is estimated at 850,000, has eight agricultural colleges, besides the agricultural department of the University of Geissen. Oldenburg with a population of 320,000 has three colleges. Saxe Weimar, with 230,000 inhabitants, has three agricultural colleges and sixty-five associations, besides a large number of evening schools and traveling professorships; and the agricultural department in the University of Jena has fifteen professorships supported by this little state.

"Thus, not to multiply the list of individual schools, wherever we look in Germany, we find that the utmost

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care has been exercised not only to conduct experiments, but to bring the results of these experiments to the knowledge of the whole mass of the people. The German empire contains not less than 184 agricultural colleges and experiment stations, whose duty it is not only to learn all that can be learned of the capacity of the soil and the methods of renewing and enriching it, but to bring the results of these experiments to the table of every farmer in the land.

"In 1877 the twenty-fifth anniversary was celebrated of the establishment of the first station at Möckern. The event brought together the agricultural chemists and others interested in advanced agriculture from all parts of the empire. A special volume was published in commemoration of what had been accomplished. The bare titles of the papers, more than 2,000 in number covered 145 pages in the octavo volume."

Now, it would not have been characteristic of American enterprise if we had not undertaken in a similar manner to improve our agricultural conditions. That there was need of it was apparent on every hand. The statistics published by the general government and agricultural bureau during the last fifty years shows that there has been a steady diminution per acre in the products derived from our soils. Take the figures, for example, presented by the agricultural department for 1864, 1874 and 1884. The figures show that the rate of wheat per acre, of corn per acre, and of oats per acre, indeed, of all grains per acre, have been steadily diminishing. The average of the wheat crop in New York went down from 13 bushels per acre to 10 and 3-5 bushels per acre; of corn from 29 3-10 bushels per acre to 23 bushels. Even in Illinois the average yield of wheat went down from 14 3-10 bushels per acre to 10 bushels per acre; and in Indiana from 14 bushels per acre to 10 4-10 bushels. Nor must it be inferred that these figures were the result of a comparison of years that were accidentally good with years that were accidentally bad. The whole computation was made upon an average of the three years, 1863, 1864 and 1865, with the three years of 1882, 1883 and 1884. In whatever way we turn our investigations,

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making all allowance for accidental considerations, we find that there was a very marked diminution per acre in all our staple crops. This was characteristic of New England, of the middle states, of the southern states and of all but the newer states in the northwest.

Now it would have been singular indeed if there had not been on the part of the wisest of our legislatures an effort to counteract these tendencies; and the first great effort that was made was in the passage of the Morrill act of July, 1862. We were then fighting for our national life, and there is a kind of sublimity in the fact that at the very time we were in doubt as to the outcome of the first great conflict, the president of the United States should have signed the great measure establishing agricultural colleges in all the states of the union. You know what the provisions of that act were. Every one of the states was given land script to the amount of 30,000 acres for each of its members of congress. States having no land subject to entry were obliged to sell the script, while states having lands were permitted to locate them in such a manner as they saw fit for the benefit of the agricultural colleges to be established. Some of the states managed their lands wisely; others managed them unwisely. The state of New York was obliged to sell its script. Nearly half of it was sold in the open market, but fortunately there was one man, Ezra Corell, who saw the enormous possibilities of the situation; and he begged the privilege of buying the script locating the lands, holding them twenty years, and when selling them, turning over the proceeds to the university. Most of those lands were located in Wisconsin, and the consequence has been that New York has realized and will realize not less than about $6,000,000 for the purpose of higher education in agriculture and the mechanic arts. The state of Wisconsin, on the other hand, was not so fortunate. How it was that these lands were frittered away I have never inquired; but so much is certain, that instead of being located in the magnificent pine forests of the north, for the benefit of the university, the script was thrown upon the market and the profits instead of coming into the treasury of the state for

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the benefit of education, went into the pokcets of speculators and lumbermen. So it was in many of the other states. It is some consolation, however slight, to know that the wealth which was largely the work of congressional action, is still within the limits of the state, and is, at least, subject to taxation.

The act of 1862 was supplemented in 1889 by the second Morrill act, appropriating $15,000 for the first year and a sum annually increasing by $1,000, until at the end of ten years it should reach the annual amount of $25,000 for the further purpose of agricultural education. To each of the states, therefore, for the purpose of agriculture and mechanic arts, there is a perpetual endowment, amounting to not less than the income from a capitalized sum of $500,000.

Nor is that all. The Hatch act of 1887 gives to each of the states $15,000 per year for the purpose of experimentation in agriculture. Thus we have, through the bounty of the general government, the means of teaching and the means of conducting scientific experiments.

It would be too much to claim that these moneys in all cases have been expended wisely. There have been mistakes in the legislatures and mistakes in the colleges themselves. Some of the colleges established under the act, while having the semblance of considerable prosperity, have nevertheless devoted their energies very largely to other instruction than that pertaining directly to agriculture and the mechanic arts. This, it seems to me, has been a mistake. Another mistake, in my judgment, has been the fact that the standards of admission to the agricultural courses have in many instances been so high as to be absolutely prohibitory. I have sometimes thought it was a mistake not to denominate these institutions agricultural schools instead of agricultural colleges, and I have a firm conviction—the result of not a little experience and a good deal of thought on the subject—that the purposes of these acts would be better subserved if the colleges would take their students at the time they are ready to enter the high school until of waiting until the end of the high school course. The farmer's boy, if he is

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to go to an agricultural school at all, will ordinarily be obliged to go during what may be called the high school period; and if then he could be taught what Professor Henry can teach him in agriculture, what Professor Goff can teach him in horticulture, what Professor Babcock can teach him in the management of the dairy, what Professor Craig can teach him in the care of stock, what the other professors can teach him in their special fields, he will, in my judgment, be far better prepared for the ordinary work of farming than he will if he is obliged, as he is still in many of our colleges, to devote half or two-thirds of his time to the study of the mathematics and the modern languages and kindred subjects.

I would not be understood as complaining with the results that have been accomplished. Much has been done, and, as time progresses and mistakes are seen, they will be corrected, and it is a satisfaction to know that in nearly all of our agricultural colleges efforts of one kind or another have been made to obviate in the future the mistakes that have been made in the past. Here at the University of Wisconsin we have what we denominate the short course, to which students with such an English education as will fit them to profit by instruction in purely technical subjects, can avail themselves of all the advantages that are offered. It is my belief that we ought to make this school purely a technical school, as purely technical as is the College of Law, or a school of medicine; and when this is done I trust and believe there will no longer be reason to complain that the farmers will not support the agricultural colleges.

Now, I believe it is only by such ways that the agricultural problems thrust upon us by the revolutions, to which I have referred, are to be solved. Experience teaches us that our soils will deteriorate from year to year unless they are fertilized in accordance with all that modern science reveals. We must carry on our experimentations; and our experiments must be conducted by the best men that can be obtained for the purpose. The results of these experiments must be carried to the fireside of every farmer who

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has intelligence enough to know the best that can be known in regard to the results of modern investigation.

There is one other method of dissemination among the farmers of general information that I must not forget to mention as a part of this great movement. The state of Wisconsin was the first to organize successfully the great work of Farmers' Institutes. Throughout the union this state is recognized as a pioneer whose work is everywhere else to be imitated. Any one who will go to the office of the Farmers' Institute at the University, and look upon the map and see the places where these institutes are held, dotted over the entire state, will recognize the comprehensiveness of this work. Better still, those who look into these institutes and observe the zeal with which the farmers under the guidance of the managers of the institutes, discuss the questions that are proposed, always find it difficult to estimate the immeasurable advantage that is accruing to the agricultural interests of this state.

Thus it is that the college of Agriculture is doing its threefold work. It teaches those who come to the University for its instruction all that modern science and modern experience reveals. It carries on a most carefully conducted series of experiments, and publishes the results of its experimentations in bulletins that are sent to all the farmers of the state that desire them; and, in the third place, by means of the Farmers' Institutes, it disseminates these results, and by subjecting them to the scrutiny and intelligent criticism of practical farmers, adapts the information gained to the every day necessities of agricultural life.

One word more and I have done. These great revolutions of which I have spoken have made successful agriculture a far more complicated affair than it was a hundred years ago. The farmer now has to be a business man, as well as a tiller of the soil. He has to adapt complicated means to ends in a thousand ways. He has discovered that successful agriculture is an affair of intelligence, far

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more than an affair of physical strength. When one of the Rothchilds was asked with what he was now dealing, he answered, "*Mit Gehirn*"—with brains. Sir Joshua Reynolds, when asked how he mixed his paints, replied, "with brains." So we might say with farming. The fields of successful industry have to be fertilized with brains. They have to be cultivated with intelligence. There is no way in which, amid the contending industries of modern life, the farmer can carry on a successful contest for independence and prosperity, except by means of an intelligence that has been enriched with a knowledge of all that can be known in regard to the arts of husbandry.

TUESDAY MORNING, February 8, 1893.
9 O'CLOCK, A. M.

President Parkinson—The first paper in order, gentlemen, is that on "Good Seed," by John S. Hall, of North Freedom.

GOOD SEED.

BY JOHN S. HALL.

Good seed is one of the great essential factors in successful agriculture. And yet as essential as good seed is, it is a subject that has never, to my knowledge, been discussed in conventions of this character, and the pen has been equally silent upon it. Good seed and good soil are close allies, and the one is as essential as the other, for we cannot grow a successful crop unless we are in possession of both.

If our soil is poor and does not contain the plant food necessary to promote a vigorous growth, it matters not how pure and strong our seed may be we invariably meet with failure. So if our seed is poor it matters not how fertile our soil may be we are sure to meet with failure in that we have not grown as large a crop as we would have grown

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had our seed been good. So they both are essential to success.

In looking over the last report of the secretary of agriculture and noting the low average of bushels that he credits the state of Wisconsin with having grown the past year I cannot but charge a goodly portion of the cause of this low average to poor seed. Surely the soil of Wisconsin has not become so depleted of plant food that it cannot grow above 11 31 60 bushels of wheat, 32 bushels of oats or 27 30-56 of corn per acre, and yet the secretary tells us that these are our average crops. With these facts before us had we not better inquire the cause of this low average in grain production? And I ask is it wholly because of impoverished soil that it cannot grow the crops it once did? And you point to your straw stacks as proof that we grow as much straw as we ever did. And I ask is it because we do not plow and cultivate as thoroughly and well as we used to do? But no man will admit that this is the case. Then I ask is it because the elements are more against us than they were formerly? And you say only so far as they may have affected the corn crop. Then wherein lies the difficulty? I verily believe that a large percentage of this low average in production lies in the fact that farmers are planting and sowing seed that has been grown so long upon the same soil and that has been bred and inbred so persistently that it has lost its vital force, and cannot reproduce itself. And again we see farmers who are alive to their own interest in other things that are careless in selecting the seed they sow or plant. They seem to think a seed is a seed and that is all there is of it. Hence I conclude that if there was more known about seeds and more care used in their selection there would be larger crops grown and better returns secured.

To do my subject justice, I will take up the different kinds of seeds separately, and give each a passing glance, only mentioning a few of the most important kinds, such as farmers are most interested in. As wheat stands at the head of all cereals in a commercial sense, especially in our more northern latitudes, I call your attention to it first.

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Good seed wheat is always plump, bright, bearing an oily appearance, uniform in size, pure and distinct in variety, perfectly clean from all other cereals and from all foreign seeds, and especially free from smut.

The germ should be bright; if this has a brownish cast it is indicative of two things, disease or bin burning. In either case reject it. Select seed that was grown upon soil that is of a different character from that of your own. The time to select seed is before it is cut, and it should be taken from that part of the field where the grain stands reasonably thick, where the straw is coarse, stands erect, and bears a well developed head. It should be threshed separately and be kept separate from other grain. It is a good plan to change seed often with our neighbors, especially if the soil is of a different character from ours. These general rules will apply to all cereals. I pass then to oats, and very little need be said of this grain, for if we exercise good horse sense, we will grow that kind of oats which we would prefer to eat, if we were a horse. By doing so we would reject all bearded and thick-hulled oats, and grow a smooth, thin hull instead. I never have seen, neither have I heard, of a bearded variety of oats (excepting the wild oat,) and from observation, I infer, that beards come upon oats only at that period when they become degenerated, and as soon as they begin to grow beards I discard them. Then good seed oats are free from beards, a distinct variety, possessing a thin hull, plump and bright, and free from smut, but I will speak of this further on.

Good seed corn must be pure in variety, the ears straight, holding their size well from butt to tip, filled out well at both ends, and the corn set in straight rows upon the cob. It must have been grown in a field where no other variety of corn grew, and its grains be free from smut.

Too much care cannot be used in the selection of seed corn, and in the curing of it so that it will not winter kill. I like to select my seed at the time I do my first husking, securing ears that are uniform in size and shape. Spread these out thinly, or trace up and hang where the air will

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circulate through it, and when it is dry shell it and bag it and set behind the kitchen stove a few days, then set away in a dry place. By doing this I never have any trouble with my seed, and for the past few years I have not gone to the trouble to test my seed corn for I feel confident that it is all right. But when I did test it I would, in the spring of the year, about ten or fifteen days before planting time, take fifty ears of corn, and take two grains from each ear, lift a sod about two inches thick, at some point where the sun would shine upon it during the entire day, spread in my corn and replace the sod. In about five or six days I would be able to determine what per cent. of my seed was good. The corn that was good would show signs of germinating, while the germ of that that was not good showed a watery appearance, and would roll out of the kernel very easily.

I will not mention any other kinds of cereals, farther than to say, they should all be plump and always distinct in variety and be thoroughly clean and especially free from smut. I lay especial stress upon smut, because I do not believe, that we as farmers, realize how vast the losses are, that we are sustaining through its ravages. I consider it to be the worst common enemy to grain that we have to contend with, and yet, farmers as a mass do not pay any attention to it and pass it by as though it was not worth noticing it, when if they would give it attention enough to ascertain the extent of their losses, they would be astonished at its greatness. We can ascertain this by going through our standing grain, just before harvest time, and by gathering in a handful of the standing grain here and there through the field. Count the straws all together and then count the diseased heads and you can quite accurately determine the percentage of damage done by this pest. Four years ago I found, by this process, my loss to be in one field of wheat, 18 per cent., and the same year my oats were damaged 14 per cent.

Since that time I have treated my seed with a solution of blue vitriol that has given me entire satisfaction.

My formula is: to every five bushels of grain, take one pound of blue vitriol, dissolve it in a large kettle of

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hot water, to this add one pail of cold water and stir well, then I put my grain in a coarse open sack and set it into the vitriol water and let it remain until the grain is thoroughly saturated, then lift it out and let it drain as long as it will run a stream, then I empty it on my granary floor, shovel it over twice and, if wheat, it will do to sow, with a force feed drill, in about two hours; if oats, about four hours. And, as you cannot tell with the naked eye whether seed is infected with smut or not, I advise the treating of all seed by this or the hot water process before sowing. I prefer the blue vitriol process, as it can be done more rapidly and does not swell the grain as badly, hence, can be sown sooner than if treated with hot water.

Good Clover seed is always bright, plump, bearing an oily appearance, and the more purple seed it contains the better. But beware of red seed in clover, for it is seed that is not fully matured, or it has been killed by some insect, and will not grow. So, in purchasing clover seed, the per cent. of good bright seed it contains, should govern the price we pay for it.

In the sowing of clover seed we should be governed by the per cent. of bright seed it contains. There is seed enough in two pounds of good pure seed, that is thoroughly clean when sown on an acre of land, to give us *twelve* plants to the square foot, if 90 per cent. of it grows. This would give us a good stand. I sow *four pounds* to the acre instead of four quarts, and I get as good a stand as I want.

I always judge timothy seed, by its plumpness, and its brightness, and pay no attention, to whether the hull is off or not. The hull being off from it is an indication that the seed is plump, and was dry when it was threshed, and that it will weigh a little heavier than if the hull was on. The black specks so commonly seen in timothy seed, cut no figure only so far as weight goes, as it is cricket manure, and I never knew it to grow. But there is a little yellow seed that resembles timothy both in shape, and size, that we sometimes find mixed with timothy seed, that is far better out than in it, it is called mustard grass, and yet it is not a grass, and stock will not eat it. It is a weed that can only be exterminated by thorough cultivation.

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DISCUSSION.

President Parkinson—Mr. Hall's paper is before the convention for discussion.

Mr. W. N. Johnson—I would offer a little suggestion in regard to cloverseed. I have handled clover seed for nearly 20 years, and I find that there is another way to look at seed besides the color. It is just as well, or better, to look at it with a glass if you are going to buy clover for seed. There are a great many ways of hulling seed, and sometimes the germ is knocked off and you wouldn't notice it with the naked eye. A very little cracking of clover seed will ruin it for germinating. It is the same with timothy seed. It doesn't matter to knock off the outside hull, but if the seed is chipped in any way it ruins it. I think we have to look to that fully as much as anything else, to determine whether the seed is perfect to grow.

Mr. Martin—Would it not be well, after you had saturated your grain with your vitriol water, to spread it, and sprinkle it with plaster; shovel it in and dry it in that way?

Mr. Hall—I don't consider plaster is of any particular benefit to wheat. I have tried that, and I never could see that it benefitted it in the least.

Mr. Johnson—But if you will sow clover seed with the wheat, you will see the benefit.

Mr. Hall—See the benefit in the clover, yes.

Mr. Wilcox—You will find the practice of stacking the clover wet injures the seed for germinating.

Mr. Hall—That would properly come in under our next paper. I never stack clover seed. I always manage to get the huller into the field; or if I thresh it out of the field I thresh it in the barn.

Mr. Johnson—What he says is true in regard to stacking any kind of seed. The wet causes the stack to "fire-burn," which is ruinous to any seed. Clover seed will stand as much abuse as any seed I know of. It will live in a manure heap for three or four or five years, but some things it wont stand, and that is close hulling.

Mr. Wilcox—I know that seed corn which has been frozen up wet is good for nothing afterwards. That is my

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experience and it occurred to me it was perhaps the same with clover seed.

Mr. T. L. Newton—I would like to inquire of Mr. Hall if smut will produce itself, or if you find smut in your oats or your wheat one season will you find it more the next season, with the same grain, or less?

Mr. Hall—There are a good many theories connected with this subject, and we shall perhaps differ some upon it. My theory is that smut is a germ that adhers to the grain in threshing or it may be there before the grain is threshed, and not knocked off by the cylinder. The object in treating the seed is to kill that germ; treating it with blue vitriol or the hot water process. A good many contend that smut is caused by the bruising of the stalk. I don't believe there is anything in that. I believe you would be just as likely to get smut by bruising the bark of a maple tree, as you would to get it from bruising a stalk of corn. The mere fact that you bruise a stalk of corn and find smut is positive proof that the smut was there before the stalk of corn was bruised, and it simply gives it a chance to use it. My theory is that the smut adheres to the grain, and is there when it is planted. It germinates with the grain, and is absorbed by the grain, and is carried through all parts of the grain by the sap as it advances.

Mr. Newton—Why I ask this question, in 1891 I had a field of oats that I found a great many smut heads in. Last year I thought it was not policy to sow the same oats. I procured some from my neighbors which they said was free from smut; but in finishing up my field I ran short of a few bushels. I sowed from my crop of the year before. I watched them all through the growing, and was unable to find any smut of any consequence in the field. I thought it might be the season.

Mr. Lippit—I think with smut, like many other of these things we have to contend with, that the season has a great deal to do with it. It is the same in the winter wheat growing districts in regard to chintz bugs; I think smut is produced more in a dry season than in a wet season. In a

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wet season everything has a greater chance to fully develope.

Mr. Hall—This last season one of my neighbors was short of seed corn. He had been in the habit of planting a mixed lot of corn; it wasn't a pure variety. I told him if he would come over to my house I would give him seed corn to plant ten acres. He came and got the seed. He planted his seed corn without any treatment, and I treated mine with blue vitriol. Placing the average low now, you would find smut on at least one-sixth of his corn, and it would bother you to find any on mine. You couldn't charge that to the season.

Mr. Martin—Do you know what he had planted on that corn ground immediately before?

Mr. Hall—He grew winter wheat the year before.

Mr. Williams—I would like to say a word in regard to different kinds of corn. I found common flint corn last year was a great deal worse than the other kind.

Mr. Martin—It ain't the kind of corn.

The Secretary—I would like to ask Mr. Hall, as he recommends the frequent changing of seed in small grain, if he thinks this rule applies with equal force to the changing of seed corn.

Mr. Hall—No. I think that if we have got a good variety of corn, something that suits us, the best thing we can do is to tie to it. I believe it is best to take that corn that lays on the table there, and you can grow most anything out of it if you set yourself about it. It is a simple matter of judgment and nothing more. I think that corn that will mature in this section of the country and that is a good pure variety of corn, is something we better tie to. I am not in favor of changing seed corn.

Mr. Johnson—I think it just the same with oats. For fifteen years I have used the same kind of oats for seed. I have better success now than I ever had. I take as much care in selecting my oats for seed, in growing the straw and picking out the most perfect for seed as I do my seed corn. I believe a man better pay $10 or $15 a bushel for seed corn than take it as a gift if he don't know what it is.

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In selecting seed oats we select the straw as well as the oats. If we find a piece of land that doesn't grow straw to suit us (we have sand handy), we draw on an inch or two of sand and plow it in, and we get a growth of straw that would surprise you. I watch the oats closely, and when properly ripe we cut those oats and carefully shock them in long shocks north and south, and put on the top cap; what is called the Scotch shock. They cure out nicely, and we thresh these oats expressly for seed. We bin them carefully so that they shan't overheat. When we get ready to sow we have selected oats, well cleaned and free from foreign substances I think a man can improve seed oats right on his own farm.

The President—You don't live far from Portage.

Mr. Johnson—Twenty miles north.

Mr. Clark—What kind of soil do you put this sand on?

Mr. Johnson—Clay or muck. Generally a sandy soil grows straight straw, but not much of it.

The President—Sand costs more than manure down in our country.

Mr. Martin—I would beg leave to differ most emphatically with the gentleman about changing oats for seed. I have raised from 200 to 300 acres of oats per year for several years and our oats were not as good; they were deteriorating in weight, in yield, and getting smutty. I have for a term of years got all my seed from Vick, of Rochester, N. Y. I sent for two bushels of oats, sowed them, and got seventy-two bushels off of about an acre. I guess perhaps a little more than an acre. I sowed two bushels on an average field I have been sowing for a term of years, and I got thirty-five to forty-two bushels to the acre. The next year I sowed seventy-two and I threshed off some pieces fifty, and on some as high as seventy-two bushels. This last year I threshed about fifty bushels on an average on the entire 200 to 250 acres of ground. I, and and my neighbors all around me who saw it, felt that it was very much due to the change in the seed.

Mr. Johnson—That might all be. He might have gone to some of his neighbors, if they had been as careful of

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seed for years as we try to be with ours, and got just as good a crop. I do believe in new varieties of oats, but I don't believe in taking oats hap-hazard from warehouses, or from people who bring seed to this country which contain wild mustard and wild oats.

Mr. Martin—I would like to carry my remarks a little further: I believe in a change of all kinds of seed, and a marked change. I believe in changing seeds from different soils; from a clay soil to a sandy soil, and from a sandy soil to a clay soil. Two years ago I was at Waupaca and bought ten bushels of Burbank potatoes and took them home, and I have seen a marked difference. I also took home at the same time two bushels of Hebron; and right side by side I planted those in the center of a field, to see what the change would be; and the increase was nearly ⅓ on the Hebrons, from the old, and no other reason that I could attribute it to.

Mr. Johnson—My main reason is the trouble of getting foul seed in the grain. I admit that by changing potatoes and corn you may derive great advantage, if properly done.

Mr. Martin—Isn't here another suggestion: In order to get pure seed go to seed men, as I do to Vick, and get a small quantity, if you don't want to pay a high price for a large quantity, and make your start with pure seed.

Mr. Hall—I think that if we get our seed direct from a seedsman whose reputation is at stake, there is no danger of getting foul seed with it.

Mr. Clark—In regard to the two pounds of clover which this gentleman says he has sown and received very good results from, I would inquire if he considers that a sufficient amount if your seed is perfect in quality? It is a matter of a good deal of importance, especially this year when it is high in price.

Mr. Hall—The great trouble with farmers sowing clover seed is not so much the amount they sow as the condition of the land upon which they sow it. Clover is a seed that doesn't want to be buried. It wants to be sown as near the top of the ground as you can get it and have it covered in wet season. Last year was the first year I ever sowed so

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small an amount; and when I told my neighbors the amount of seed I had sowed they said, "You will never get half a stand." They were surprised in the fall when they saw the stand of clover I got from what seed I sowed. Really, it was bigger than I wished it was. If you sow clover seed on land that is rough, where a portion of it will be buried three or four inches deep, there the more seed you put on the better, providing you have got a good long pocket-book. But with clover seed at $8 a bushel, I advise you to prepare your ground well.

Mr. Clark—Wouldn't you any year?

Mr. Hall—Certainly I would.

Mr. Lippett—I would like to have Mr. Hall state to us about the number of seeds there would be in a pound of clover-seed. I think he is able to tell you, and it will demonstrate that point at once. My opinion is, from my own experience, that two pounds of seed, properly distributed, the ground in proper condition, will give you in nine cases out of ten all the clover you want.

Mr. Hall—I have stated in my paper that a pound of seed sown upon an acre would give us twelve plants to a square foot.

Mr. Clark—A pound, or two pounds?

Mr. Hall—Two pounds. I wouldn't have made that statement if I hadn't made some calculations beforehand. I set to work a short time ago and counted a thimble full of clover seed; and then I dipped with that thimble until I had weighed a pound. A pound contained 520,000 and some odd seed. Now you would be surprised at that statement perhaps. 520,000 is a good many. So that in sowing two pounds it would amount to over a million seed to the acre.

Mr. Blackstock—I cannot speak from experience; but having listened to the paper read by the gentleman and having heard the remarks of others, it seems to me the important thing is not so much the change of seed from one soil to another, but the quality of the seed when you make the change. You may send and get a bushel or two bushels of very prime perfect oats of some man who has made a specialty of raising an extra quality, and sow that

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on a very nice piece of ground well prepared, and sow it alongside of a quality you or your neighbor have been raising for some years, and there is a difference. The difference is not owing to the change from one soil to another so much as it is that the oats in one field are of a better quality. So with everything else, your corn, your oats and your wheat. A change from one soil to another may be good, I don't know; but the thing that tells in the final result is the quality of the seed that you sow, and the way in which you prepare your soil, and the way in which you take care of it.

Mr. Lippet—I contend that the change in soil is *the* thing; and a potato, an oat, wheat or corn, that would be almost extinct on my soil, which is a clay loom, changed to another soil will produce a good crop. I have tried it to my entire satisfaction. Three years at the outside is the longest period that any man ought to plant from the same stock.

Mr. Hall—Excepting corn.

Mr. Wilcox—I have experimented considerable, and observed closely for 20 years and I have found almost invariably a benefit derived from changing seed to different soil, providing reasonable care is exercised in the selection of the seed. Twelve years ago I purchased some choice seed potatoes, and I have grown them continually upon my own land ever since, and they are just about as near run out as any potato I ever saw.

Mr. Faville—Did they do well at first?

Mr. Wilcox—Exceedingly. They were the Snowflake variety.

Mr. Clark—I would inquire of Mr. Hall what he would recommend to the farmers' convention as the best manner of sowing clover seed.

Mr. Hall—I do not know but that will come in the next paper. I invariably sow my clover seed by hand. I don't mean sowing it broadcast by hand, but I have a machine made on purpose, 14 feet long, and I can sow a strip as I walk along 14 feet wide. It is on the same principal as the grass-seed seeder to a drill. There is a trough made to hold the seed with a slide inside to rub along the bottom,

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which I slide with my hands as I walk along. The faster you move your slot the more you will sow to the acre. I advise sowing it on top of the ground, and brushing it over with a smoothing harrow.

A member—In the fall or spring?

Mr. Hall—In the spring. If it is winter wheat, I sow it on the last fall of snow.

Mr. Matt Anderson—I have had some little experience with sowing clover seed. I think I was the first man who introduced clover in my section. In 1856 I sent to Ohio for 18 bushels of clover seed. I had the first clover huller in that section of the country; and I have sowed clover on every acre of small grain I have sowed on that farm from that time to this. I think I have raised more clover seed, perhaps, than any man in Wisconsin for the last two years. Last year I didn't raise quite as much as the year before, but I raised 120 bushels of seed; the year before nearly 200 bushels. Now, I sow mine with a Hawkeye grain drill, force feed. I have made several mistakes in sowing clover seed, amongst others always using the harrow after the drill. I didn't do that the last year or two. I just rolled it after the drill. The harrow buried it too deep. This Alsike clover I am now raising if buried two inches deep I don't think will come up, especially if there comes a rain afterward which makes a crust on it; but have a splendid set of clover this year and I didn't harrow any after the drill. There is a good deal of work in sowing 60 or 70 acres of clover by hand. I find it takes no time to sow it with a drill, except the filling up of the seed box. I try and have my drill set so as to sow the seed quite shallow, and not to cover the ground too deep. In that way of course we get the clover in rather shallow. I think there is only one secret about sowing clover seed, and that is to get it covered lightly, as closely to the top of the ground as possible; and a wet spring, like the last, if it is not covered it will take root. I have dug up some clover this fall from last spring's sowing that had roots a foot long; young clover. A gentleman told me that Alsike clover wouldn't grow on top of the ground. I have some Alsike

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in this building that is going to the Columbian exposition, so I feel proud of my clover record.

The President—The next paper will be that of Mr. W. N. Johnson on the subject of "Tillage".

Mr. W. N. Johnson--Brother Farmers: I don't suppose I shall tell you anything new. I don't know as I can. I will give you my ideas as near as I can, and in as short a time as I can. I believe that the farm is to the farmer a bank. Clover and manure are his best securities. Tillage is the manipulating of these securities deposited with this soil so as to secure the best results. We find in this country such a great variety of soil that one man's experience don't do for another's entirely; and yet there are some things in which we are generally alike. We can not all raise one kind of crop; our soils are not adapted to it; nor can we follow altogether one way of work for our crops. We can all raise clover. I live on what they call the "Indian Lands." We have probably a larger variety of soil, or fully as large a variety as you will find in any state in the Union. We have clay soil, muck and sand. There are none of those soils but what, if taken in time, we can raise clover upon; and if we get good clover sod we are then ready to raise most everything In that section of the country, although not in my vicinity, there is getting to be one of the greatest potato growing countries in the west. You will hear quoted "Waushara County Potatoes." They are quoted in the market in fact all over the United States. Those are the potatoes to raise on dry sandy land. In the working of these soils clover is our basis. We can grow clover if we commence early enough. It has been demonstrated that none of these soils are so poor but what if the first crop raised on it is seeded almost immediately to clover you will get a result. A small result of clover does more for that soil than any manure we can get. In our section we now depend generally on corn, hogs and potatoes. Of course we have to raise oats for feeding purposes, and we do even ship oats.

As I can not go over all the different kinds of crops, I will take up the subject of raising corn and potatoes.

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After having the land seeded down to clover we commence say in the year we have got a crop off and are using it for pasture. The clover being a biennial plant, we do not want to leave it down but two years. If a medium crop we cut two crops for hay, or one for hay and one for seed; if a mammoth crop we pasture until the 20th of June, and then turn the stock out and cut for seed. The seed has been quite a crop with us. I have known of crops of over 10 bushels to the acre, clean seed. While the field is in pasture we manure whenever we have time. We commence on one side of the field and draw manure out all winter, setting stakes on the snow so as to know where we have been. What manure we get out in the fall, if we can plow that sod we plow. During the winter we manure all that is left of that same field; and we keep on until about time to plow for corn; or say, two weeks before we are ready to plow for corn, we cover all the rest of this manure by plowing. We plow from four to five inches deep, turning the sod under. We use a plow adapted to sod plowing, making a particular point of plowing it well. We don't plow round and round the field, but strike out in strips, making as few dead furrows as possible; the sections being maybe 8 or 10 ten rods between dead furrows. You want to get this plowing done at least two weeks before you plant, because it seems to me then is when you want to cultivate your corn; that is, the surface cultivation can be done then.

With us we find that planting the ground immediately results in a great mass of weeds. We put on the drag, and then let it rest a few days and the weeds will all be up. As a general thing just before the corn is planted we have a nice growing time. You will get the weeds up, their heads just peeping out of the ground; and then is the time to do the main part of the cultivating of your corn. When you see those weeds nicely started, take a disc harrow or a surface cultivator, a pulverizer as it is termed; it goes over the soil something like an Acme harrow. With that tool you go first lengthwise, the same as with a harrow, and then crosswise; then leave it a few days and go over it again, and you will have a seed-bed which is en-

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tirely free from these weeds, that is to a depth of an inch and a half to two inches. Then we use a horse planter. I have tried hand planting and almost every way. If you plant in drills, plant north and south. We have the best success in planting 3 feet and 8 inches apart in the rows; that is, the one way, north and south. If we plant in drills, we plant about 12 to 14 inches, and try to have it planted one kernel in a place. In this way every stalk has an equal chance at the sunlight; it has a better opportunity than when in a bunch, because it takes from the soil here and there; whereas, in putting four in hills together they have to interlock each other's roots and run off in every direction to find plant food. Commence two days after planting with a good drag, or some pulverizer, and go over the soil a couple of times to destroy the weeds that may have come up. You can work that corn, if you work it right straight off, until it is a couple of inches high, without injuring it; at least with a round-toothed smoothing harrow. It may not be necessary to work it until it is that high. Then we commence working with the surface cultivator.

Now when you are talking about cultivating corn you are going backward if you go to the deep cultivation. I commenced five years ago working corn with the surface cultivator, and I had 125 acres in that year. We had two sulky cultivators. My son saw this advertisement of the Mendota cultivator, and I being pretty well acquainted in that country wrote down and asked if they were willing to send one up on trial. They said yes, if I would give it a respectable chance. They couldn't afford to send a man up to show me, but they would send a little book along. I thought that was as good a chance as I could get. They sent the cultivator up. The farmers all laughed at it. They said: "You aren't doing what you ought to by your boys; they want to ride." My oldest son don't stop for what people say; he wanted to try the thing himself. The idea is the old fashioned shovel hoe, the knives lay along on the ground and slip under the soil. My boy took a field drilled north and south of 12 acres and worked both sides

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deep cultivation, and worked a strip through the middle with the surface cultivator. He had worked it only a couple of times before he saw the difference. He was for throwing the other cultivators aside, but I said: "No, keep on and we will see how it will be in the fall of the year." In the fall we made up our minds that was the tool. It showed for itself that surface cultivating was the way to cultivate. We had a nicer, cleaner field; and it was amazing to see the difference in that corn; when you come to husk the corn, the way it filled out on the end. That is surface cultivation. (Showing samples). There is probably one or two kernels lost, but it was all over the end when taken out of the crib. Those three ears of corn are from three different fields, and were raised in 90 days from seeding. That ear was raised in 87 days from seeding. That is the way I like to see corn filled out.

I claim in deep cultivation you will have all the way from that much (indicating) bare, to way down to here (indicating.) When you deep cultivate you cut off the branch roots that hold and steady the corn up. Nature has got to provide those bracing roots. Corn has got to have a foundation. It is like some men, they turn up a good deal of feet before they grow. I believe that a good understanding is necessary for corn, as it is for man. It won't stand up unless it has good brace roots. If it has to stop in its growth to make those brace roots, they having been torn off, the corn is put back. There is where we get two weeks growth. We don't pay so much attention probably as they do in some places to sending off out of the state to get good seed, and I will tell you how we come to get over that. We used to get our seed from almost every direction, and it always beat us; so nowadays if I don't save enough of my own seed corn there is a Dane neighbor of mine who has good success, and I get some of him.

As A. T. Stewart said in New York to the young man just starting out, "Follow the man who has good success; if you are inclined to his ideas in business see if he is a success. Don't experiment yourself, for you can't afford it." I wouldn't give that (snapping fingers) for a book far-

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mer, if he had no practical knowledge of his own to back it. I want to see him show up his works, and by his way of working that he believes in the story he is telling. If he can show you a good full corn-crib, and well rounded hogs, and though his neighbors are not doing very well, he has good crops and a bank account, it shows he is successful, and that man's advice is worth something. If I see a man who has a nice field of corn, and a good horse, I say, "You are the man for me." If you have got corn that gives you 100 bushels to the acre, I say, "Let me see how you save your seed," and I ask you to save me a bushel. I take that corn home, and I try it in my own little way in the house; and then in the spring I try it again, give it a chance out-doors; and when I know that corn is all right, if it yielded 100 bushel to the acre for him it will for me.

We need to take good care of the soil, and when you look after the interest of your soil you will find the very things you need right along side of it. I could tell you a story of using some muck land of mine to raise oats, on which the oats wouldn't stand up good; they would lodge down before they were ripe. The next year I sowed the field partly to barley and partly to oats. The field was black muck with clay on the under side. The field lay quite level but was hard to plow. There was a sand bluff about a mile off. We went up on that bluff and drew 700 loads of clean red sand on this field, right on the snow, with sleighs, and spread it over the soil. Everybody called us fools. I told them it was none of their business and we were going to make that land scour. That was the best manure I ever put on soil. The silex in the sand was what the soil needed; that alluvial deposit on top of that red clay was entirely free from silex. That was done four years ago. We raised four crops on that land since and we have had a beautiful stand of straw and the grain fills. There was strength in the land but the grain wouldn't stand up long enough to fill out. That sand wont wear out. It will be there for years. It don't make the land look red because it has mingled with the muck. It gives it a nice polishing quality. You can't sell an Englishman a piece

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of land that won't turn over; he is going to have soil that will clean from the plow. He has no idea of a piece of land that don't scour; and that is the way with me. I can't bear to see a piece of ground plowed that you can't tell which way the furrow was intended to lie. I want to see the plow make a nice clean job of it.

Mr. Shepard—I would like to ask Mr. Johnson if he kept account of that field of corn where he made the test of shallow versus deep cultivation; if he kept an account of the amount of corn that he got from the two different parts of the field. He spoke of a twelve acre field in which he had a portion in the middle with shallow cultivation and on each side deep cultivation. That was a fine test; I want to know if he measured or weighed the corn from the different parts so that he knew how many bushels were grown on each piece.

Mr. Johnson—I hate to answer that, because I may be called a liar before I get through. I don't know but I will anyway, so I might as well be killed for a sheep as a lamb. This (indicating samples on table) is the kind of corn we raised on that twelve acres. That is what might be called "squaw" corn. The first crop was dent corn, and was entirely killed out with the cut worms. Then we went over the field and worked it a couple of times so as to kill out everything, and started brand new with squaw corn. We planted it north and south. That corn was measured by the basket, we didn't weigh it. And we got 200 baskets to the acre, shallow cultivation. There were 832 baskets, and it might not have been just exactly measured, so I wouldn't call it over 200 baskets to the acre. The other went 150 baskets.

Mr. Chamberlain—I would like to ask the gentleman what variety he planted that yielded 120 bushels in 87 days time, and how he saved his seed.

Mr. Johnson—This (indicating Dent corn) is the corn that we raised the largest yield from, and it was planted in drills. This got ripe in 87 days. Sometimes it will go 90

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days. A great many times it will get ripe earlier than 87 with shallow cultivation. We don't try to raise any great big corn. This is big enough to suit us.

Mr. Chamberlain—How do save your seed?

Mr. Johnson—For our seed corn we go into the field and take it off the stalk. When we go through the field we find the top ear. As a general thing there are two ears on a drilled corn stalk, when there will be only one on hilled corn. We take the top ear if it is a perfect one. I like to save a good shaped ear; one that is even and both ends well filled out. We have a room up stairs over the kitchen that is warm. There is a chimney goes through it. We spread the corn out on the floor around the room and have shelves that we can lay it on. We spread it out thin so that it will be perfectly dry. This room has good ventilation, so that we get fresh air overhead. It is well cured out.

Mr. Faville—Now we want you to tell us whether you are an agent for this cultivator or not.

Mr. Johnson—Not in this section of country. If a man up my way wants one, I will tell him where the manufacturers are.

Mr. Faville—I have never used one of these surface cultivators, but I have seen them used and watched them carefully. My judgment is, from what I have seen of them, that I wouldn't take one of the old-fashioned shovel cultivators as a gift. I would order it out of the field and use a surface cultivator.

Mr. Matt Anderson—I have two of those surface cultivators, and have been an advocate of shallow cultivation for many years. I was very much disgusted with those riding cultivators, so much so that I threw them to one side and got the walking ones. I recollect having an argument with Judge Bryant, the former secretary of the State Agricultural Society, on this very subject. He contended that the tearing off of those roots was a benefit to the corn instead of an injury. I said to him, "Judge, you go and cut around several hills of corn and leave all the others uncut and see which will raise the best corn in the fall of the year." I never heard whether the Judge took a sharp

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spade and cut around the hills or not. I am satisfied that the shallow cultivators are going to be the kind to be used. I have had mine only two years. I think mine were not made at Mendota. The Mendota cultivators have a little scraper behind them?

Mr. Johnson—Yes.

Mr. Matt Anderson—Well, one of my neighbors got one, and couldn't work it at all. Those shallow cultivators are good if the soil is in good order. If you are in a hurry, as I know I am frequently, and the ground isn't properly prepared or has baked very hard, you can't get them to work well. My practice is at such times to start the old-fashioned cultivators ahead of the surface cultivators. They don't go down maybe more than two inches. If the ground is soft, a little deeper perhaps. Now this story of 107 bushels of shelled corn to the acre may sound large in this country. I lived in the Miami valley in Ohio before coming to Wisconsin. At that time I recollect a Virginian stating that no man could raise a hundred bushels of corn to the acre. He had never seen more than forty bushels to the acre in Virginia. I once saw in the premium list of the Indianapolis Agricultural Society $200 offered for the best five acres of corn. I was taking the New York Tribune at the time and was particular to watch the result. The premium for that five acres was taken by a farmer that raised 165 bushels of shelled corn to the acre; and it was sworn to.

Mr. Johnson—Gentlemen, I do not wish you to misunderstand me about that yield of corn. I don't mean to say that the 200 basket was 200 bushels. The 200 baskets were what we call the regular bushel baskets. It would have weighed probably 110 to 115 bushels of shelled corn. The corn we raised this year, by surface cultivation, was raised in this "baby" field they tell about. This corn was raised on a twelve acre field up along the road where everybody could see it. We had a basket made on purpose that would hold enough for a bushel of shelled corn. It was weighed and that field went a little over 100 bushels to the acre.

The Secretary—I want to ask Mr. Johnson whether in

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this experiment that he tried of shallow cultivation along side of that where he used the old sulky cultivators, he noticed any difference in the time of the maturing of the corn, between that which received the surface cultivation, and that which was cultivated deeper.

Mr. Johnson—There was a good two weeks difference in its getting ripe.

Mr. Faville—Yes, it will hold out that.

Mr. Shepard—Mr. Johnson has told you that experimenting by the private individual is expensive. Now, a number of the experiment stations have been making tests along this same line. They have demonstrated that in cultivating corn by this shallow cultivation, two things are to be gained. One is to get a blanket of earth to keep the moisture from evaporating, and the other is to avoid mutilating the roots. I haven't looked these things up to verify them, but you will find reports on the subject from different experiment stations right here in the library, or in Orange Judd's "Farmer." Professor Goff, before he came here, while in New York, conducted such experiments. Professor Hays took a stanchion and fastend a butcher knife in it and ran it across the field just so close to the corn, so that he knew the distance out from the corn that the knife pruned and the depth to which it went. There was also an experiment conducted in Illinois by Prof. Hunt, on the same line as that of Prof. Hayes in Minnesota. I do not remember exactly what the results were, but in every instance it came out in favor of shallow cultivation. Of course they found the most difference in dry years. Now, it is not the number of bushels that Mr. Johnson got per acre that you want to have in your mind, it is the comparative number of bushels he got from deep and shallow cultivation. He has measured it, and he knows what he has got. I will say by way of explanation that I am not an implement man, nor am I advertising any implements; and these men who conducted these experiments were in the employ of state institutions and have no personal interes in shallow versus deep cultivation. I see no reason why these results cannot be depended on. Another thing

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Mr. Johnson brought up was that of practical experiments. I agree with Mr. Johnson exactly. Farming is not of any account unless a man does it in a practical way, and can tell you how deep to set the roots, how close to the hill, and how many pounds were produced under conditions exactly the same

Mr. Wilcox—I understood Mr. Johnson to say that this twelve acres or thereabouts was killed by cut-worms. Was this corn planted on sod land?

Mr. Johnson—Yes.

Mr. Wilcox—At what time was the sod plowed?

Mr. Johnson—Don't mix these twelve acre lots up. They are a mile apart. The twelve acres of ground on which we tried the experiment in regard to the deep cultivation instead of shallow, was on the back edge of my farm. I had a large flock of sheep, and had been using this land for pasture for sheep. It was timothy and clover sod. We turned it over in the fall for corn, and this piece is the only piece in that eighty acres that was high enough to be proper to raise corn on. We staked out a little oblong piece and planted it to corn. This was planted the 20th of May. We waited a few days, and we thought we had a nice stand of corn. The boys had commenced to drag it, and they said it wasn't worth dragging. I went over and found it was the cut-worms. We left it a few days. Before the first of June we gave it a thorough cultivating with a disc harrow, and worked it over with the pulverizer, and got it in perfect condition. We destroyed the cut-worms. We brought them to the surface and destroyed them. I think the hot sun had a good deal to do with it. I think I had two teams on that piece of ground for two or three days.

Mr. Broughton—How long has this field been seeded down?

Mr. Johnson—This field had timothy and clover together and we were cutting it for hay; and being only twelve acres in eighty we didn't want to cut this notch out of the field and it was in sod several years.

The Secretary—Prof. King is in the room and we all

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know he has given careful attention to this question of tillage.

Prof. King—I would like to say a few words bearing on some of the practices which Mr. Johnson has found so successful; and before I make those statements, lest I forget it I wish to say that in about a year from now what Mr. Johnson has said will be in a book; and when you see those statements, or a friend sees those statements don't ask him to discredit them because they are found in a book. Now Mr. Johnson advocates early plowing for his corn, early tillage. That is, cultivating his corn before he plants it. He emphasises specially the point gained in killing the weeds by that method. That is an important point, but it is not the chief point that is gained in that early tillage. We in Wisconsin, and in most parts of the United States, do not have water enough in the growing season to mature the largest crops that the soil is capable of producing. Now early plowing saves in the soil, until the time when the corn needs it, the water that is absolutely required for a large crop. Unplowed ground in the spring when it is wet may lose as much as an inch and three-quarters of rain in five days. This has been found from actual experiment. Now the plowing saves that. In Mr. Johnson's case, where his soil is sandy, and where the amount of moisture it holds is small, that is a very great factor with him. Now after you have plowed rains may come and put your soil in the same condition as to clods that it was before it was plowed; so his frequent stirring of the surface develops repeatedly on that surface as it is destroyed, that conditions that save the water.

One section of our short-course boys have been working this winter on the rate of evaporation from soil covered with a depth of loose soil of half an inch; another with a a depth of soil three-quarters of an inch. Now they have found by the actual weight that the soil that is not stirred at all may lose from one-fourth to one-third more moisture in twenty-four hours than soil which is stirred simply three-quarters of an inch deep. That is, they have verified from day to day, and obtained those results. The half

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inch depth does not protect to the the same extent that the three quarter inch does; so there is in this matter of continually stirring the soil a great gain in the line of moisture. The importance of it comes in emphatically after rains. A very heavy rain may come on a piece of ground, and that rain has the effect not simply of wetting the surface, but bringing water that was deep down in the ground up to the surface; so that at certain times you may find in the surface foot of soil more water, after a rain, than actually fell there, and the ground below the foot may be actually dryer. Now if you allow that surface to lay there unstirred, and hot winds come on, that moisture goes away, and not only the rain which fell, but some of the water which it caused to come up from below. Now if you go over that with shallow cultivation, you develop a mantel over it that holds not simply the rain which fell, but the moisture which the rain caused to come up from below. Now there are some of the motives which underly what practical men find so servicable in obtaining their results.

Now a word in regard to deep and shallow cultivation. Three inches of mulch, a cultivation three inches deep, saves more moisture to the soil than a cultivation two inches deep. This I have found by actual experiment in the field and I think there is no question about it. But the question is not a simple one and it does not follow that the ends of cultivation are found simply in killing weeds and saving moisture. There may be other factors in there; just what, we don't know yet. We have had deep and shallow cultivation in its effect upon corn two years; cultivating one year about an inch and a half and three inches; and the present year using one of those surface tools which Mr. Johnson refers to, barely shaving off the surface and leaving a loose layer on top, as compared with three inches cultivation. Now last year there was a slight increase of yield on the deep cultivation over the shallow. This year we had a difference of about five per cent. in favor of the shallow cultivation, where the work was done with careful handling and careful weighing. Those are the differences for two years; one year one way and one

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year the other. Now I think this question is one which must necessarily be modified by the kind of soil, and not only by the kind of soil but by the season. We may find that one season one sort of cultivation is better than another, and on one soil one sort of cultivation is better than another, but we do not understand yet the principles with sufficient positiveness to say for this kind of soil and for this season just what it should be.

Now in regard to the corn roots. If any of you can spare the time before you go home to come up to the experiment station you can see there a section of two corn rows; a hill of corn here (indicating) and a hill of corn here (indicating) with the roots that those two hills produced situated in the actual position that they occupied in the soil. You will see that those roots start out from this hill and reach clear across the row, a little swing down. The distance from the surface of the soil down to the roots in the middle being at the time of closing cultivation about five inches, but coming up nearer to the surface as you go to the hill. At earlier stages the distance here in the center is a little deeper, that is, the roots come up towards the surface. But those long roots that run clear across don't represent all of the roots that the corn had; from those long roots that string across from row to row, there are short roots that run straight up and come actually almost to the surface. Even in your shallow cultivation, the shallowest cultivation, at certain times you will cut off these roots. Those roots that are sent up from these side ones are sent up for a purpose. I doubt if it is simply for moisture. I think it must be for some conditions that exist there in consequence of the greater amount of air that is found in the soil there near the surface. If you go down deep enough you cut off not simply those brace roots, but roots that are actually feeders extending clear through. If you cut them off you must necessarily diminish your yield in consequence of it, unless it is a very wet season.

Mr. Farnham—I would ask how long you would extend the cultivation?

Prof. King—That it seems to me would vary with the sea-

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son. If you have a very heavy rain coming onto your corn crop just at the time you think you are through cultivating, it seems to me in that case, unless the ground is excessively wet, you better turn around and go right through again.

Mr. Johnson—I take issue with Prof. King in regard to his contrast of the two methods of cultivating, because it wasn't fair to compare one year with the next. I claim the trial should be in the same field during the same season, under same conditions of atmosphere, moisture, etc., for a trial between shallow and deep cultivation.

Prof. King—Mr. Johnson did not understand the character of the experiment. Instead of having one strip deep cultivation and one shallow we had several strips cultivated deep and several cultivated shallow each year.

Mr. Johnson—That would do. I didn't understand it that way.

The President—The next paper will be "The Harvest," by Mr. Leslie H. Adams.

THE HARVEST.

By LESLIE H. ADAMS.

There are so many loop holes in the business of farming that the man who could successfully stop all the leaks and prevent waste of any kind, would be well worth going a long distance to see and converse with in order to become acquainted with his methods. The chances are, however, that he would become rich and retire from business before any of his neighbors had time to get acquainted with him.

There is bound to be more or less of loss and wastage, no matter how well we are posted or how hard we try to avoid it. There are so many things requiring attention, that while we are watching one thing something else is left undone.

I have in mind at present the manner in which some of our crops are harvested. It does not cost so much time or labor perhaps to take care of our clover and timothy when we let it stand until fully matured, but in so doing we suffer a loss that our careful and economical methods would not

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tolerate in other details of our business. It is hard for us to be consistent at all times, and it is very easy to get into a rut when we think we are on a solid macadam pavement. We discuss balanced rations, and nutritive ratio, in convention and institute so that we may be able to combine the carbohydrates and nitrogenous substances in the proper proportion to produce the best results without unnecessary loss of either one of these food elements. We know that we can build a fire and create heat by the use of such foods as corn, barley, timothy hay and corn fodder, but unless we supply water in the form of protein we shall never be able to get up steam. We are not so likely to make the mistake of feeding too heavily of foods rich in protein as we are of the fat formers, for the reason that the latter are more available, and then a wholesome regard for our pocket book tends to check any extravagance in the use of the former. Sixteen dollars a ton for wheat bran, and $24 a ton for oil meal are pretty good and convincing reasons why it is not avisable to overdo the matter by letting the cow make her whole meal of dessert in the form of protein delicacies.

Since it is apparent that we appreciate the costliness and worth of this element of protein at one end of the line—in our feeding operations—let us see how we treat it at the other end, at harvest time. We will take for our example the harvesting of clover, as this should be the principal forage crop grown on the stock farm, with the possible exception of the corn crop. We learn from the Illinois experiment station (Bulletin No 5) as a result of careful trial and the making of a great many analyses, that an acre of clover cut in full bloom produced 1,445 pounds of dry organic substance of which 57 per cent. was digestible. An acre of the same clover harvested when most of the heads were dead produced 1,283 pounds of dry matter, of which 53 per cent. was digestible. Here was a loss of 162 pounds of dry matter per acre as a result of allowing the clover to stand from the time it was in full bloom until the heads had turned brown, and also the additional loss of four pounds out of every one hundred pounds of dry mat-

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ter that was rendered indigestible from becoming too ripe. Let us carry the comparison a little further and see what the loss was in that expensive element of protein so necessary in the feeding ration. When cut in full bloom there was 268 pounds of crude protein produced on one acre; when fully ripe the product was 224 pounds, a loss of 44 pounds of crude protein per acre caused by not harvesting the crop at the proper time. Query, would it not pay us just as well to try and maintain an equilibrium at the time we are storing our fodders, as it does to try to balance them up when disposing of them to our animals?

In the harvesting of timothy there is also loss of this desirable element of protein when the plant is allowed to stand past the bloom stage. In the compilation of analyses of American feeding stuffs recently issued by the department of agriculture at Washington, I get the following data in regard to timothy. The results of all analyses of timothy, sixty-eight in number, show 5.9 per cent. of protein; the average of twelve analyses of timothy cut in full bloom show 6.0 per cent. of protein; eleven analyses of timothy cut soon after bloom show 5.7 per cent. of protein; twelve analyses made when the timothy was nearly ripe show 5.0 per cent. of protein. Here is a loss of one pound of protein in every hundred pounds of dry substance produced.

Perhaps you think it a small loss, but when it could be saved as well as not without extra cost in handling the crop, is it not worth while to stop the leak?

There is another crop that in my opinion is mismanaged more at harvest time than any that I have mentioned. I refer to the oat crop. I am firmly of the opinion that there is a better way for our stockmen and particularly the dairymen to take care of the oat crop than the ordinary way in which it is harvested. Let it be distinctly understood in the beginning that I do not urge the growing of more oats to the exclusion of such crops as clover and corn, but I do urge that better treatment be given what we do raise. What is gained by allowing the oat crop to stand until it has turned yellow and is in condition to be harvested with

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a self-binder? Nothing of feeding value certainly. Possibly there is a little labor in harvesting saved, but this saving is made at a great sacrifice of the feeding value of the crop. The Kansas Experiment Station in 1890 carried on an investigation for the purpose of finding the effects of the degree of maturity on seed oats. A series of plats were cut at different stages of ripeness designated respectively as "dough'" "hard dough" and "ripe." Each of these grades of seed was again sown the following season, with a view to ascertain what effect, if any, the degrees of maturity of the seed oats had upon the crop. The following yields rerulted:

	Bu. per acre
Seed oats cut in dough	38.99
Seed oats cut in hard dough	28.68
Seed oats cut when ripe	26.66

There was no perceptible difference in the time these grades matured.

At the same station a trial was made to determine the best time to harvest oats. Fourteen plats were used; they were in all respects treated alike until harvest, when the three series were cut in "dough," "hard dough" and "ripe," respectively, with results as follows:

	Bu. per acre.
Plats cut in dough yielded	32.50
Plats cut in hard dough yielded	31.25
Plats cut when ripe yielded	27.73

From this data it is plain that there is no feeding value gained in the grain by allowing it to stand after it has reached the dough state, but quite the reverse. There is a positive loss in the value of the grain. How is it with the straw? Does it require analyses or a table of figures to show what has been going on with the straw from the time it first commenced to turn yellow? I think not. The various processes of decay that are rapidly going on during that time are self evident.

I would suggest that on all farms that are stocked up so near their limit that it is difficult to produce enough hay or coarse fodders to supply their wants in this direction, that the practice of turning the oat crop into hay be tried.

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Cut it in the milk stage with the mowing machine, let it lie in the sun and wilt for a few hours, possibly a day, and then cock it up in fair sized cocks. Cap it by all means if the caps are available, but they are not quite such a necessity with oat as they are with clover hay. Let it stand in the cock three or four days, even a week, until it has passed through the sweating process, then take advantage of a fine day when it comes along and open up the cocks after the dew has dried off; do not tear the hay to pieces, but leave it in convenient forkfuls. Two or three hours will at this time put the hay in condition for the barn, as the moisture has all sweat out to the outside of the stems and is in a condition to dry off very readily. If you will try this and follow the plan I have outlined there will be no difficulty in making a hay equal or better than the sample I have on exhibition. When the oats are cut in the milk stage the grain will not all be plump or fully developed, but there is no loss of feeding value for the substance of the grain will be in the hay. You will observe that I make a distinction between oat hay and oat straw. There is as much difference between oat hay and oat straw as there is between oat straw and timothy hay. In every 100 pounds of air dried oat hay cut in the milk stage there is 9.85 pounds of protein, that element which has more to do with fixing the value of a stock food than any other one thing. In 100 pounds of air dry timothy there is 6 pounds of protein; 100 pounds of air dry clover contains about 12 pounds of protein. There is no fodder I know of outside of the leguminous plants that comes up so close to red clover in the amount of this important food element as does oat hay.

There is another advantage gained by caring for the oat crop in the manner I have indicated, and that is the saving of the threshing bill, and I might also say the cost of grinding the grain for by this system both are rendered unnecessary. The saving from these two items of expense alone will amount, when all things are considered, to a fifth of the price that would be received for the grain if it was placed on the market.

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I am well aware that the harvest brings with it so much of labor and concern, such an avalanche of work, that the farmer who can successfully withstand the pressure and take care of the various crops that follow in close succession at that busy time with reasonable promptness, and secure each one at the time when it contains the maximum of feeding value, is the exception rather than the rule. Therefore I would have you regard the ideas presented in this paper merely as suggestions to be acted upon as well as time and circumstances will permit. To summarize:

Let us study the composition of our feeding stuffs, that we may be the more able to figure out a balanced ration.

Let us endeavor throughout the busy harvest season to keep our work so balanced that we may be able to put up some properly balanced feed with which to make balanced rations.

Let us raise more clover.

Let us not raise more oats, but make more oat hay.

DISCUSSION.

Mr. Lawson—A few years ago I had one part of my field of oats, about five acres, that was very rich, and got so stout that it was beginning to go down. I saw if I let it get ripe that it would be rotten and wouldn't be worth more than manure for bedding. I put a mower into it, and I made off of that five acres twenty big loads of oat hay which lasted what cows I had all winter, one feed of hay and two feeds of ensilage. I got more out of that little piece of oats than any oats I ever raised and threshed. While I am on my feet I would like to state that I am engaged in dairying. I don't care about raising very much grain. I want clover and corn. I have heard and read articles on raising clover with the corn crop; that is, sowing it in the corn field. I would like to ask if anybody in this audience has had any experience, or knows of anybody that has had any, in raising clover in that way.

Mr. Johnson—In surface cultivated corn, by leaving the

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ground quite level you can sow your clover in the stubble and have it so you can harvest it; but it is an unpleasant thing to harvest a clover crop over corn stubble. We have done it that way for pasture, but don't like to mow it.

Mr. Wilcox—I have tried that, and gave it up for the reason suggested. Clover land must be made very smooth so that you can cut it closely. That we cannot do very well on corn stubble.

Mr. Anderson—Have you found a good effect from sowing land plaster on clover?

Mr. Johnson—Yes.

Mr. Stiles—It takes twenty pounds of water to dilute one pound of land plaster.

Mr. Johnson—You ask any chemist and he will tell you that rain is detrimental to land plaster. We sow it in a dry time for the purpose of absorbing or bringing to the plant the moisture in the air; the same as salt. Salt doesn't do as much good in our locality as some other places.

Mr. Williams—In a dry time is not salt better than land plaster?

Mr. Johnson—It is plant food; in that way.

Mr. Arnold—My experience is when I have sown land plaster in a drouth that I didn't experience any beneficial results that year or the year following. Never saw any results from it at all. It seems to me reasonable that it should help the young plants; I don't know anything about it, but as far as sowing plaster upon fields of clover or timothy in drouth, when I didn't have a rain soon after, I never could see that it did any good that year or the year following. Now this pertains to black loam and clay land.

Mr. Broughton—Do you believe plaster is of any benefit to our limestone soil?

Mr. Anderson—That depends on the time you sow it. I believe in sowing landplaster about the first of May when the clover has started. I have seen the value of it on clover, but I couldn't see any effect on wheat oats or corn. I think it depends a little on the soil.

Mr. Broughton—I would like to ask Prof. Henry if in the

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decomposition of limestone, either Trenton or Galena, there is not enough gypsum to answer all the purposes for the soil ?

Prof. Henry—I would rather not talk about theory, but actual practice. There is nothing definite about the theory of land plaster. There are large sections in this state where it will not pay to use land plaster. One of them is right here. We can't make a dollar a ton by sowing land plaster on our University farm. I suspect where Mr. Johnson is the whole thing appears different. He is on a very different soil. The way for him to do is to keep right on, if he finds it profitable. The way for another farmer to do, if he thinks of using it, is to buy it and sow it in hundred pound lots as recommended by Mr. Johnson and other farmers, and if it don't work don't use it. No chemist can get at the soil fine enough to tell from his analysis whether it needs land plaster or not. You say that is not very satisfactory; that our Agricultural College ought to tell you more than that; but it is better to tell you the truth in this matter, as we understand it.

Mr. Stiles—Is it necessary, in order to have land plaster operate well to have plenty of moisture ?

Prof. Henry—I think it is generally conceded that land plaster accomplishes very little in dry weather.

Mr. Stiles—That has been my experience.

Prof Henry—Now I told you that we have no definite knowledge about land plaster. We are getting towards it, and here is where it possibly comes in. Recently the German investigator, Hellreigel, following up work performed by Prof. Atwater of Connecticut, finds that clover is enabled to take nitrogen from the air and fix it. Now I have cut that sentence a little too short. In the clover plant are living things in the roots. You can call them animal or vegetable, but they have the power to reach out and take nitrogen out of the air and any other products which the clover plant can assimilate. Those creatures live in the little knots on clover. Scientists have been trying to find out what those knots were for fifty years. If you want to get an interesting lesson next spring pull up a clover plant

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and notice those little knots. They are little colonies of germs; myriads of creatures in those little knots; and those creature can take free nitrogen from the air. The corn plant cannot do it. The nitrogen fixed by those little creatures makes it possible for the clover plant to reach in and take it, and the clover plant grows on that nitro gen.

Let me tell you of an experiment over in the Michigan Agricultural College. The professor took some pure sand and washed it again and again so that there was no matter in it except the pure sand. He then had the students sow four or five clover seeds in a flower pot of that sand. He had twenty or thirty pots and he told the boys to let four or five of those pots stand with nothing but the pure sand and see how the clover seeds would grow. For the other pots he told them to go out in the garden where there were beans growing, take about a handful of the soil and put it in a vessel with water and put a few teaspoonsful of that water on the other pots that were sowed the same way. In one set of pots the clover had to grow in sand watered only with distilled water. In the other they had some solution from a bean patch. Now I saw the clover plants. In the one case none of them got higher than two and a half inches above the ground, and there they died although watered with distilled water. Where a little of this soil from the bean patch had been put into the water, a teaspoonful or two, evidently germs had been brought in from this field, and there there the little roots of clover were soon covered with those knots, and the clover plants grew until they were a foot or a foot and a half high, a great big plant growing in a flower pot. The germs were evidently scattered over the field and they formed these knots in one case while the other plants didn't have clover knots on them. Now it looks as though land plaster with its sulphate of lime furnished food perhaps, or assisted these creatures in multiplying more rapidly, making more of these nodules on the plants. Perhaps that is the reason why a hundred pounds of land plaster, a very insignificant amount, spread over an acre of land, will often cause a crop to double.

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Mr. Johnson—Right here in our discussion comes out the one fact that a farmers institute held here in this town wouldn't do me any good, and a farmers institute held in our town wouldn't do you any good. Our soils are different. We have each one given our knowledge and individual experience and it may be contrary to what the universal belief is under other circumstances. In one case I used for manure good clear red sand, and it did me more good than any I ever drew out in the same proportion. There wouldn't anyone think of using that, only the necessity of the case. It seemed to be necessary to give stiffness to the straw. That probably wouldn't do you any good, because the straw would grow strong enough. But if your oats fall down badly, try it, and it will do you as well as anything you have done.

Recess until two P. M.

WEDNESDAY, February 8th, 2 P. M.

The President—We will now listen to a talk by Prof. Craig upon "Some Studies in Breeding."

Mr. Chairman and Gentlemen—It seems to me that the breeding of farm live stock has reached a peculiar point. The general farmer I believe takes more interest in breeding than formerly, and the importation of stock has greatly lessened. The American breeder is becoming more of a breeder in the tru sense. Before this he has been breeding largely by proxy, and the animals that come to us have been largely foreign bred animals. It therefore seems to me it would be most timely for me to try and discuss, as far as I can, some features of American breeding, and comment upon some of our practices.

There are two divisions to the work of improving farm animals. One refers to the production of desirable qualities and the other refers to the reproduction of those qualities. One has for its basis selection and development, and the other relies more on pedigree. While speaking of the matter of selection I would like to make a little distinction. I shall not try to make any distinction between breeding

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and feeding as ordinarily spoken of, for I believe the two should go together; and if I might use an illustration to show the relation of these two to each other I would take a river. You might say that the channel of the river represents the breeding, while the water in that river represents the feeding. The channel, which is the breeding, determines the direction that the food will take. But I would rather stick to the terms selection and development rather than those of feeding and breeding. Now selection rests, as far as I can see on the fact that all animals differ. You will find no two animals alike, and as there are two animals concerned in all mating you can see that some qualities are intensified, some weakened and some wiped out altogether. To try and show, to a certain extent, what differences exist let me give you a few figures from our herd, taking the dairy herd at the station. On the average it would represent a good herd, yet we find quite a difference in the cows in that herd. Taking the best cow that we have got, her milk yield is 5,620 pounds, of which the average test has been five and one-half per cent.; making the annual yield 309 pounds of butter fat. In the same herd, under the same care, we have got another cow that gives 5,678 pounds of milk which only averages four per cent., making her annual yield 227 pounds of butter fat. Now this last cow is an average that is much higher than the average of the state, and both would be considered good cows. There is a difference of over 94 pounds of butter. Now if we apply that to a herd of twenty cows it would grow to 1,500 pounds a year. If there is that difference between good cows what must be the difference between the good and the bad cows?

There is one other feature of selection that I wish to refer to more particularly. That is the selection by pedigree. It has been the custom I believe of late to belittle the subject of pedigree, and try to show that there is no force in it. The use of a pedigree is simply to carry this work of selection still further. It gives you an opportunity of selecting the ancestors of an animal as well as selecting that animal itself. If you find it necessary to select living ani-

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mals with so much care why is it not necessary to employ pedigree to enable us to select desirable ancestors as well? In that belief lies the function of a pedigree. The fact that an animal is registered does not add to the value of a pedigree, only so far as it gives you an evidence of the reliability of that pedigree. The only thing, to my mind, that contributes to the value of a pedigree is the worth of the ancestors that enter into it. Of course a pedigree is simply a tabulation of an animal's ancestors, and it is the worth of the ancestor that gives value to the pedigree. Now to indicate just how the pedigree acts in improving some animals, perhaps the thoroughbred horse affords the best illustration. In 1791 the breeders started a stud book. It was the first book ever published for that purpose. They accepted for the foundation in that book horses that had been registered in the racing calendar, which was published first in 1752. I give you these dates simply to show that for the last 200 years the thoroughbred horse has been bred in almost absolute purity. The result is that there is hardly a breed of light horses today in existence that does not trace more or less to the thoroughbred. The English Hackney has some of it's blood; the Cleveland Bay has some; the French coach has a great deal of it; and the American trotter, perhaps the lightest and best evolution we have, has considerable of it. And those qualities have passed to these other breeds largely because of the purity and uniformity that has existed in the breeding of the thoroughbred. They have given to these other breeds something in finish and staying power, which I believe they could not have got from any other source. It seems to me this breed of horses, being the oldest for which a record was established, shows clearly the force of purity of breeding conducted for a long time. Pedigree is based altogether on inheritance.

To indicate the form that selection by pedigree should take I have worked out a few facts in regard to our herd, and shall give them to you as briefly as I can. I have sought here simply to show that reliance can be placed on pedigree, and that there is reason for faith in it. In the

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management and building up of the herd it has been our aim to keep the heifer calves from the best cows as far as possible. The calf has been kept because of the promise of its pedigree. Taking five of the best cows from which we have saved heifers I find that the average milk yield for those cows at a certain age reached 5,799 pounds, and the estimate of butter yield based on the fat test is 305 pounds of butter. Taking the five heifers from these cows, as near the same age as possible to get them, they yielded an average of 5,702 pounds of milk and an average yield of 327 pounds of butter. It will be noticed that the milk yield has slightly decreased in the case of the heifers, but taking the group of five heifers they have given 108 pounds more butter than their dams. That has been largely due to this selection by pedigree, and to a great extent due to the fact also that we had a butter bred bull and used him altogether on the herd.

If breeding has so much influence it may be asked what is the best system to follow? Let me say a word in regard to the systems of breeding as they are understood to day. There is one method called cross-breeding; that is you take two different breeds and mate them together. The results from this have been mostly unsatisfactory. Then there is in-and-in breeding. That I understand to be the mating of animals as closely related as cousins. Where the relationship is outside of that I think the proper term to use would be line breeding. Another term that has been coined of late to meet our advance in breeding has been called natural breeding, that is breeding the best to the best, regardless of blood affiinities. Successful practice and right reason endorse this system.

There are only one or two things that I would like to refer to that have appeared to me to stand out very strikingly in the American practice. There is a tendency in a good many lines of our stock breeding, to not follow any specific line of breeding. We see it in our cattle breeding operation where men are trying to combine the beef animal with the milk animal. It seems to me that extreme development in two such lines as those is impossible. The

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way I look at it is in the light of the plain proposition; if you are standing between two opposite points how you can go to one point without going away from the other? If they are opposed you certainly must do so; and it seems to me that the experience of breeding shows they are opposed in extreme development. To give you a few figures bearing on that point in the last bulletin issued by this station I find there are two herds in this state that nicely illustrate this principle. There is a herd of specifically bred butter cows in our state that annually yields close to 400 pounds of butter. There are thirty cows in this herd and the average of a winter ration is nineteen cents. There is another herd containing eight cows and the figures given from these show that they yield 175 pounds of butter per cow, and the daily cost of winter ration is fifteen cents per head. The latter breeder gives as his avowed aim that he is breeding for beef and butter. In these instances there is a difference of 225 pounds of butter per cow, which is produced at an extra cost of $5.40 for winter ration, in favor of the specifically bred cow. I think that illustrates nicely the difference between special breeding and this other form of breeding which tries to combine these two qualities together.

Referring to horses, I think the same illustration comes in there. You will find cropping out again and again some person who has in mind a general purpose horse; a horse that can go under the saddle in all the saddle gaits; that can speed on the road; that can do all the farm work; and in fact do anything that all horses are supposed to do. To show the effect of specific purpose in horse breeding, I do not think I can take a better illustration than the American trotter. In 1818 the best certified record was that of Boston Blue, namely a mile in three minutes. The best record that stands to-day is 2:04 for the same distance. At that time, as far as we know, there was not a horse in the world that could trot or pace in 2:30. Last year there were nearly 2,000 in this country that did it. Special breeding in one line will do other things for us. It is opening up a

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market for us for light horses in England. In 1890 England imported 19,286 horses from abroad and these are valued at a million and a half dollars. They are forced to import these, and I feel certain that if we had the right class of horses here we could send a great many more over there. I give you the opinion of a large London dealer, who has handled from five to six hundred American bred horses. He writes: "Personally I must say I thoroughly dislike foreign horses, with the exception of the American; and much as I like a good English or Irish hunter I am firmly of the opinion that as a carriage horse the American is better than the English and Irish horses. I believe this is due to the fact that for generations the carriage horse in the States has been a distinct race and never been spoiled by the mixture of cart blood." It seems to me that illustrates what a specfiic line of breeding will do. The same thing carried out in our heavy horses would accomplish just as much. If there are any questions I can answer in regard to the subject I shall be glad to do so.

The President—Any person who desires to propound any question to the professor will have an opportunity to do so now.

Mr. Arnold—There is no doubt but what the professor's theory is correct. I believe it is recognized by all good breeders that this is true. That to obtain the very best results in any one direction we must breed and feed and care for and educate and train in that particular direction. This applies to breeding the same as it applies to the training of the mind or of the body. Animal developement is like mental developement in this regard. There is one point that I would like to have emphasized, that is, I would like to have the farmers of the state of Wisconsin take cognizance of; that is, that we have been breeding at random and have in particular localities had no definite object in view. While the scientific portion of the farmers or breeders recognize these facts as spoken of by the pro-

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fessor the ordinary farmer ignores them. He tries one breed one year and then he thinks he can get a little better result by crossing with another, and he continues this until he has such a succotasch of breeds that the last condition of things is perhaps worse than the first. It seems folly for me to speak of this, inasmuch as we have had farmers' institutes and conventions of this character in this state for years, and still it is a fact. Outside of a few representative farmers who have been in the habit of attending these institutes and these conventions, and the breeders, the average farmer is doing just what I tell you.

Then another thing. In the old countries in particular localities they have a distinct breed of animals; all are breeding in that particular line; so that that locality has a reputation. Outside of the reputation that Wisconsin has gained as a dairy state, I don't know that we as a state have any reputation for any particular breed of cattle or horses, and a buyer coming to Wisconsin, or to any county in the state, don't know what he is going to run on to, because there is no locality that has any reputation so far as its stock is concerned. There may be an exception in Sauk county. There, for instance, they have been breeding the Percheron horses, and the Boston buyer would perhaps have got some information as to the fact that they had adhered to that one line of breeding in Sauk county, and would go there for horses of that kind. I was down in Iowa the other day in a locality where the farmers had for fifteen years been breeding Percheron horses. Every spring a buyer comes there from Boston—or buyers come from Boston—and buy up every young horse. They are sure of a market. Now if we would adopt some such course as this and farmers could be able to work together and determine to work up some particular breed in their particular locality, we might make farming vastly more profitable in this state than we do. I simply speak of this to bring it up that we may think it over and possibly we may be able to work in harmony, work together in this regard in some particular locality and thereby in the end be financially benefited.

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The President—Without leaving the chair I would like to ask the professor what he thinks of the prospect of our establishing in this country a special breed known as the American trotter, that will breed uniformly as to speed, and possibly as to size, style and finish ?

Prof. Craig—The great trouble it seems to me so far with the trotter has been that there are two elements that have been more or less entering into their composition. If we go back as far as we can we find the trotter's nearest relation to be the thoroughbred which sprang from Arabian stock. The thoroughbred has had more to do with the making of the trotter than any other breed of horses that exist. Then we tried to graft onto the thoroughbred breed of horses the peculiar trotting gait. This has been carried so far and the trotter has advanced so far that it is just on the point of reaching the status of a breed. The gait has been developed so that we find the horses that are siring the most trotters are those that are trotting bred There is only one thing it seems to me that we have got to do to make the trotter more of a breed, and that is to have some different standard from what exists to-day. Now this is a wide question. I do not wish to go into it in detail, but I will leave with you, briefly, the idea I have in regard to that. There will have to be, it seems to me, a different standard of registration. As far as I have looked into the history of stud books and the making breeds, I find that the general way has been to accept a number of horses that had the desired excellence and take these as the foundation stock. When they are taken in they are assigned numbers and then after that any animal that is to be registered in that stud book or record must have its ancestors registered in that record.

Now that has not been so with the American trotter, and it seems to me that that would be the way of placing the trotter on the basis of a breed. We are going the right way so far. I would not put performance behind pedigree by any means, but I would first require that a horse to be recognized as a standard bred horse should have both his sire and dam registered; and then at the same time keep

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track of the records and let the records guide the breeding. That has been done with the thoroughbred, and I do not know as I could quote better evidence of the success of this scheme than to refer to the thoroughbred horse. You see as it is now the trotter may enter the register simply on performance. He can enter also on breeding. It should be so that he could enter only on breeding, and still keeping the records, the records would be the guide to the breeders as to the right direction in which to breed.

The President—What would you do with your great performer that is not standard bred?

Prof. Craig—The year book should contain such just the same as it does to-day. In that have all the horses registered that have records. Of course such a horse as that referred to would guide the breeding. Breeders would find out his blood elements and they would search in the register for such horses as had been bred in a like manner. It seems to me the performance would count for just as much. The performance would remain the test of merit; but at the same time by this means the breeding side would be placed on a firmer basis.

Mr. Johnson—I am a little interested in this trotting-bred horse. I think in addition to pedigree and performance we should have the individual; but specially to have the individual, both sire and dam. I think that a mare should not be allowed to be registered that has any defect that spoils her for a dam; that is, hereditary. I think the same is true of a sire. Even if he could go in two minutes he should not be allowed to be registered if he has hereditary defects that might be developed. I think we should keep our well bred horse free from those hereditary points that are sure to break out; string halt or anything of that kind that is sure to break out, should be kept out of the register. I think a standard of excellence in points ought to go along with the registration in all kinds of horses.

The Secretary—I would like to ask the professor what place he finds among American horses for the introduction of foreign coachers like the French coacher, the Oldenburg and the Cleveland Bay, whether he thinks the American

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breeder of horses has any good reason for going into the development of these breeds here.

Prof. Craig—To be frank, I do not think that those horses have a place which could not be filled by the American trotter. They have a place undoubtedly. The coach horse sells well, but I have no doubt that the American trotter in time, by being bred as Mr. Johnson says, for more individual excellence, can be made to supplant the French coach. These other horses have had the run so far because they are of a type that sells in the market. Take the French coach horse, and the characteristics of that horse are decidedly excellent, and they sell well for carriage horses; but just the trouble with the French coach has been, and it is the same trouble that exists with the American trotter to a slight extent, is that they are not prepotent enough. As far as I can find out from a study of the matter, I find that in France they use considerable Thoroughbred blood. They have used the same blood in the Hackney, in the Cleveland Bay; and every one of those horses with the exception, perhaps, of the Cleveland Bay, have had their prepotency more or less influenced through that source. It is not generally accepted that the French Coach horse will get with surety progeny of the French Coach type; and if we bred the trotter so that they have some of the style of the French coach, something of the finish and stamina of the Thoroughbred, I think that horses can be produced from them that will answer the purpose of the American market for light horses.

I have quoted an extract from the opinion of one of the largest buyers of horses in England; and when you find an Englishman, who is so inclined to stick by the old, taken up with the American horse, you may be sure that their qualities are desirable in the market. I am very sorry that somebody did not take hold of this work some time ago and save the Morgan horse from extinction, and build up from those horses the American coach horse. I feel satisfied, from what little I know about those horses, that if they had been bred to a type they would have made the most stylish, most enduring and most salable coach horses that could be

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put in the market today. I have no doubt that by keeping up the standard of excellence of the trotter in a short while our common horses could be made to fill the requirements of our markets just as well as these imported horses.

Mr. Blackstock—There is one thing that has always seemed strange to me in attending a county or state fair, or any place where there was trotting. You will find that there is not one sound trotting horse in a hundred. They are all bandaged up or tied up; very imperfect. They are ill-shaped. They may go a certain distance in a short time. That seems to be about all they are good for. If you put them on to a wagon they can't do anything. They can't pull. They are not bred to it, they were not brought up to it, they are not trained to it. If you want to travel for ten, fifteen or twenty miles, and you have got a full-blooded trotting horse, he can't do it; if he can it will take all day; some farmer's old plug will do it in half the time and come out all right, where this fine blooded horse is used up. That is the truth of the matter. You can't find, I say, one good, perfectly sound, well shaped, perfect built trotting horse; and when you want to find a good nice horse that can go nine or ten miles an hour for ten hours in a day you have got to get him out of some other class. Just the same as if you want to get a first-class, good, sound, healthy bodied, healthy brained young man you have got to get him from the farm. He is the man after all that is doing the city work to-day. It is not your young man that is brought up in the city, nor your college or university bred young man that has been sent from the city, but it is some of these boys that are sitting back here in the rear that are in one sense full-blooded at any rate; Hollanders, Norwegians, Americans, Irish and Germans. Look at them. They are strong and healthy. I make the comparison, and I don't make it as a joke. I am in earnest about it. It is just so with your horses exactly.

You have in the human family a strain of bloood in the persons of kings, queens and dukes over in the old country and in God's name what do they amount to? Who are they and what are they? They do nothing but eat and drink.

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Of all classes of human beings on the earth to day they are the most imperfect, good-for-nothing, worthless set. You have got to get right back to first principles and make your selection, not by this breeding, crossing and selecting, but simply let them grow up. I don't think it is a wise thing for the farmers of this state of Wisconsin to get a foolish idea into their head that they must run into the breeding of fast horses. It is not a good thing to do. Who wants them after all? It sets the boys crazy on the farm. They have got some horse that they think can trot around in two and a half minutes and they spend their time in training it. Another horse comes after them and beats them. The time and money is gone and what is the result?

Mr. Curtis—I disagree with my friend Mr. Blackstock when he says that trotting horses are not sound, that they cannot go ten miles as fast as a common horse. He is greatly mistaken. I can take him to my stable and show him as sound a trotting horse as he ever saw and if he has got any that can draw more than they can I will give him a high price for them. The trotting horse is the soundest and strongest horse we have got in this country. There is no horse its equal for draft and endurance. The professor says you must breed for pedigree. If we had had pedigree a hundred years ago we wouldn't have had any horses. The Morgan horses were bred for their quality. Until we began to get pedigrees we had good horses. Now if a man has a colt worth $15 or $20 with a pedigree worth $15,000 or $20,000, he is going to keep him. Now they look to pedigree. They don't look to the individual. I think the professor has said that there were 6,000 horses in the United States that had a record of 2:30 or better.

Prof. Craig—Two thousand went in the past year.

Mr. Curtis—I don't know but this pedigree business is a pretty good thing, but we never had a horse in this county that had what you would call a fine pedigree until the last two or three years. I can name two or three horses raised in this county that were used as draft horses and worked on th efarm until they were four or five years old and now

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have got a record of 2:30. I could mention "Joe Wonder," who went through the circuits with me last year and took a record of 2:18 in Chicago and was sold for $2,500. I don't believe there is a horse in Dane county or anywhere else that could do more than that horse could. Of course I could have bought him for $500 in my stable, but I didn't think he was worth it. I bought a horse from an Irishman out here in the country, called "Jim." He had no breeding. I took him through the Illinois circuits and he got a record of 2:29¼. I could have sold him for $2,000. I got a three-year-old mare last fall with no breeding—said to be some Morgan in her, trotted on our track down here last fall in 2:27. There is also this horse "Nubbins" out here with a record of 2:27¼. I don't think it is right to discourage farmers from raising good traveling horses. When you come to Clydes or Normans they will do more work than any one of them will. They are a good horse in their place, but there are poor ones amongst them and there are poor ones amongst the trotters. Last week I attended a sale in Chicago and saw lots of horses sold for from thirty to seventy dollars that had pedigrees and were registered; colts, yearlings and suckers, but they were little things; hadn't been kept well, and nobody seemed to want them.

In order for the farmer, in my opinion, to make any money with horses he should select some nice large brood mares worth a couple of hundred dollars a piece; then use a good horse, and he will have no trouble selling them. I saw them sell teams that I wouldn't give $300 for, for $700 at auction, good, nice, trappy looking bay horses weighing about 1200; and there was a scarcity of them; while the little inferior things with pedigrees were given away almost. Then again some were bought for pedigrees alone, andas high as $1,500 were paid for horses that you wouldn't hardly take home. It was just as people fancied. The market is short of good horses. If a man expects to get a race horse worth $2,000 from a little mare not worth $75, he is mistaken. The dam has two-thirds to do with the colt. In order to make any money you must get good, high-

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headed, high-stepping dams and raise good horses. You can get $1,500 for a good pair of horses any day.

Prof. Henry—I wish to draw out one point. I think figures are often very misleading, and the fact that there were 2,000 horses did something this year where one did the same forty years ago, is apt to be misleading. It doesn't necessarily mean that we have made great progress. Are there not 2,000 race tracks to-day where there was one forty years ago? There are at least 2,000 men at work following horses, nursing them, and coddling them and putting traps on them and trying to get a mile out of them, where there was one forty or fifty years ago. I think that is the reason we have got so many horses going in 2:30, because there are so many men working at them. So many rich men have men hired attending to those things; so many horsemen living by it. If we had taken just common horses it is probable that there would have been hundreds and hundreds of horses of certain merit without any particular breeding, found, developed and discovered to where there was one in those olden times.

Mr. Johnson—I own some trotting horses. I haven't got any cripples. I don't have to raise cripples. When the standard is set as it should be for excellence in points that should be part of the register and then we should breed for size. If we make a mistake in getting a trotter we have got something to sell. I don't have to advertise horses at all and I never keep them unsold. They find it out and I can get good offers for my horses from Chicago and Milwaukee. Every time I come to the city somebody says "Aint you ready to sell that mare?" And about their roading, they can go to the end of the road with any man's horse. I have got a horse on my place that can get up and go out in the snow drifts and beat any Norman ever made and weighs 1,150 or 1,200. They have got more stamina, and can go ten miles an hour just as many hours as a man wants to ride and come back the next day and kick up their heels and feel good and don't wear out like plugs. I have got Percherons, but I don't think of hitching them up when I want to go anywhere. If I want to

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do a big day's plowing I hitch up three trotting horses abreast on the plow and they will out-walk any other horse and stand the heat next to a mule. When the thermometer stands ninety the trotting horse is in his prime.

The Secretary—To-morrow forenoon we have a discussion of the horse question proper, the draft horse and the road horse.

Now, the way this discussion is progressing you are simply stealing the thunder of these gentlemen who are to speak to-morrow. Let us confine our discussion to breeding horses, cattle or other stock as you please, but not to go into the question of the merits of respective breeds or we shall get into hot water.

Mr. Johnson—Then I will step back to the point I started from, breeding excellence of points, merit and size—I didn't add size—along with your registration. I believe in breeding for size as well as anything else.

The President—The next talk will be upon "Lessons in Feeding," by Prof. Henry.

THE FOOD OF MAINTENANCE AND THE FOOD OF INCREASE.

BY PROF. W. A. HENRY, Director Wisconsin Agricultural Experiment Station.

For our lesson in feeding today I desire to direct your attention to the subject of the food of support and the food of increase with our domestic animals.

According to German investigators, swine require something like two per cent. of their live weight in grain or meal to support them. For three years past I have been carrying on careful investigations to determine the actual figures for this country, and it will take some years yet to complete the work, but already sufficient data have accumulated to show that the Germans have put the amount of food required to maintain the animal at too high a figure for this country. Please bear in mind in this discussion

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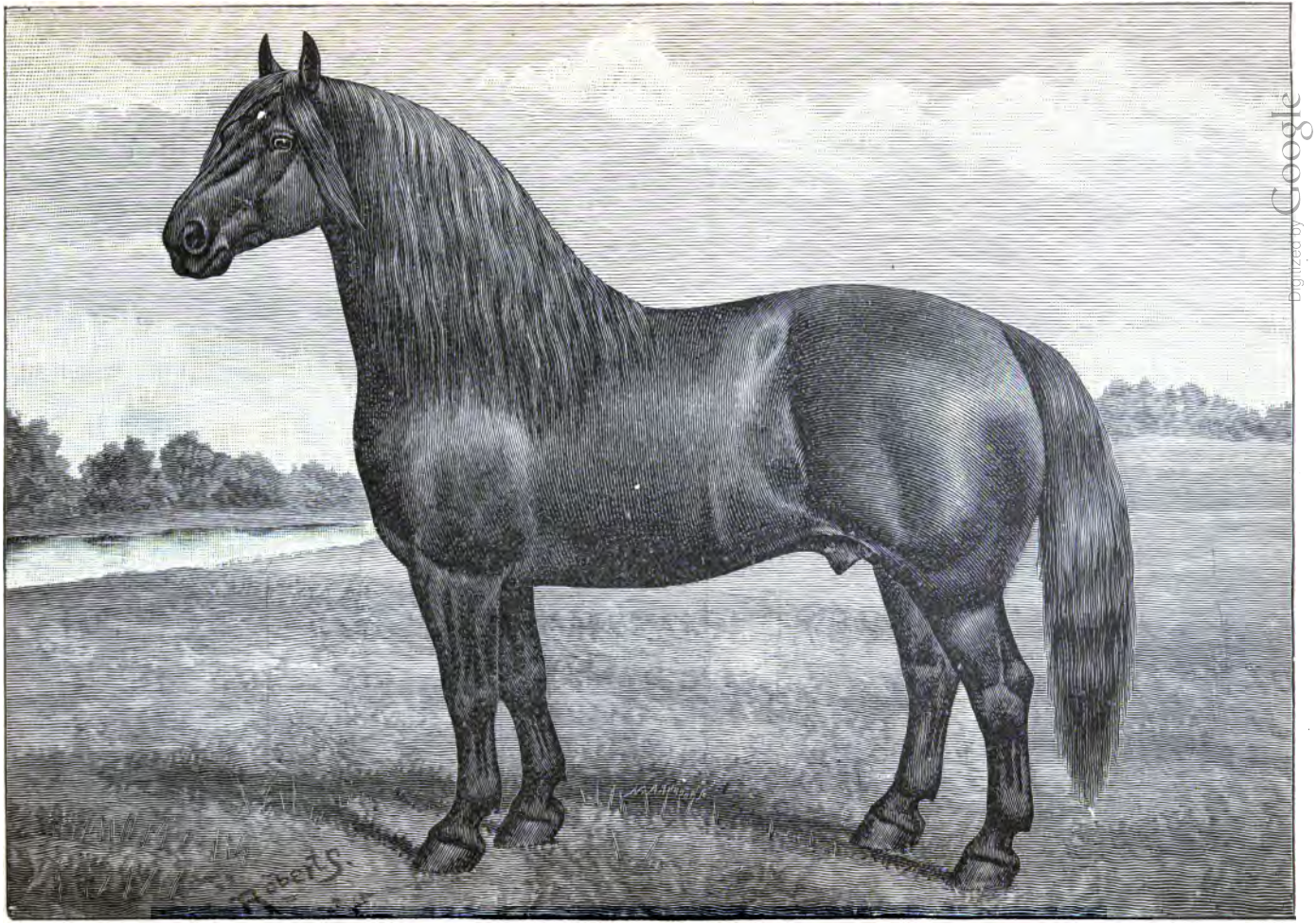

Percheron stallion Emire 16707 (24037) imported by H. A. Briggs, Elkhorn, Wis.

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that in all cases the food used in my investigations has been the uniform mixture of one third shorts and two-thirds corn meal, by weight.

Our results show that for a pig weighing 100 pounds about one pound and a half of grain is required for the mere maintenance of the animal body. If, therefore, we bring to our hundred pound pig each day one and a half pounds of the grain mixture above mentioned, the animal merely holds its own weight and makes no progress, so that at the close of the day our ponnd and a half of food has disappeared, our pig is one day older, but no heavier in weight, and we have nothing to show for the food supplied. The amount of meal required to thus support the body functions without permitting the animal to gain in weight, has been designated "the food of maintenance" or "the food of support."

If now we increase the amount of food from a pound and a half a day, the food of maintenance, to four and a half a day, about all our pig will eat, he will thrive nicely and make a gain of about one pound per day therefrom. Thus it appears that the three extra pounds of food which we have given this pig above the food of support gives us a pound of increase. We may designate this portion of the ration as "the food of increase." When our pig is receiving four and a half pounds of feed per day, and is gaining in weight at the rate of one pound per day, one-third of what is supplied constitutes the food of maintenance and two-thirds the food of increase.

When our one hundred pound pig has increased in weight to two hundred pounds, the food of support must also be increased, though not quite doubled, judging from our investigations. It is somewhat less than three pounds. When our pig has reached the weight of five hundred pounds the food of support appears to be about five pounds, or one pound of food for each hundred weight of animal carcass. The decrease in the amount of food of support seems gradual, starting at a pound and a half per hundred with a hundred pound pig and gradually diminishes until reaching a pound per hundred with hog weighing five hundred pounds. But

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the five pounds of meal required to support the hog weighing five hundred pounds is half a pound more than that which the same hog required when weighing one hundred for both maintenance and increase.

To our 500 pound hog we must first of all supply about five pounds of meal to support the animal carcass, and to this must add something like three pounds additional in order to secure one pound of increase. That is, with our 500 pound hog it takes something like eight pounds of meal to give a return of one pound of gain in weight, while four and a half pounds of the same were sufficient with the same animal when it was a 100 pound pig.

Evidently from this study there is a limit to the weight to which hogs can be profitably fed, even if they can still make additional gain. All the time we are first called upon to furnish the food of support and only after this demand has been satisfied does the remaining food begin to increase the weight of the animal, in which lies the return to the feeder. If pigs weighing fifty pounds each could be purchased at the same price per pound as large hogs, it is very plain that such animals would be the most profitable to feed, but young animals always cost more per pound than older ones, and our problem is thereby much complicated.

Growing out of this study I an sure our feeders at once catch the practical lesson of pushing their hogs to market just as rapidly as possible, for every day there is the food of support which must be supplied before the food of increase begins to make profits possible.

Then, too, this food of support in which there is no profit, increases in amount as the animals increase in size, and this makes the cost of maintaining large animals longer than necessary a very serious matter.

What I have said does not necessarily lead to the conclusion that all pigs should be farrowed in the spring and sold in the fall. It may be better to have them come in midsummer and carry them through the winter while yet small and requiring no large amount of food for support. Such pigs if properly fed are in the very best condition to

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start off in spring for a profitable summer campaign and usually reach the market when prices are the highest. If pigs are to be carried over winter they certainly should not be large else the food of support is too expensive.

It is often possible for the feeder to pick up a lot of hogs with large frames, but thin; these he buys at a reasonable rate per pound and finds they increase very rapidly in weight for the food consumed. Of course large profits are made with such animals, but the exception in such cases as this does not work against the rule I am trying to make clear.

Our dairy cow presents a still more complicated problem than the growing and fatening pig. With her there is a carcass weighing something like a thousand pounds, which must be maintained the whole year round, and in addition to this food must be supplied sufficient to nurture the young calf which weighs about 75 lbs. when dropped. Mr. Woll of our station, in his study of the ever interesting problem of feeding dairy cows, concludes from the investigations of the Germans that about 60 per cent. of all the food that a dairy cow can profitably consume is required for her support, and the growth of the calf within her. This leaves 40 per cent. only as that portion which can be converted into milk. Some will think there is a discrepancy in these figures and in proof bring up the well known fact that a cow when living on a very small amount of food will still yield milk. This is true, but at such times the cow is drawing from her body to elaborate milk. Nature is so careful of the young of animals that when milk cannot be produced through lack of food supplied, the body of the mother can for a time be broken down to help keep the young alive.

I fear that some will misunderstand my percentages if I do not further explain. I have told you that a cow requires 60 per cent. of all that she can eat to nourish her own body, and that 40 per cent. goes for the milk. Now if we are feeding a cow only enough to properly maintain her and then desire to add a sufficient amount of food for her full support while giving milk, we must add 40 parts

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to the 60 a lready given; forty-sixtieths is 66⅔ per cent. That is, if our cow is getting enough to keep her only, we must add 66⅔ per cent. more feed and she will then receive enough for both her maintenance and a full milk yield.

In presenting for your consideration the important matter of the food of maintenance and the food of increase, I trust I have put it in such a light that the practical conclusions make themselve plain to you without further pressing from me. You will say that what I have attempted to show you is already known and well understood by our farmers. Why then are there so many lean animals to day upon Wisconsin farms? Why so many three and four year old steers still waiting for the final turn at the feed bin? Why so many thousands of dairy cows that are still returning to their owners but $25 per year for milk or cream sold at the factories? We hear much about the introduction of better breeds of cattle; before we can have better breeding we must have better feeding. We are progressing rapidly, but there is need of much instruction yet by our teachers and institute workers, and much thought and careful attention by the farmers of our state to the great and ever pressing question of properly feeding our farm animals.

DISCUSSION.

The President—Any questions to be propounded to the professor?

Mr. Grisim—I think Prof. Henry's experiment is good as far as it goes, but I have had some experience in handling hogs, horses, cattle and sheep for over sixty five years, and I never have found two animals that would do exactly the same on the same treatment, so I think in order to carry that out to a full test he would have to take more than one or two or three or four. And this feeding a hundred pounds to the animal. That has been my rule, as a general thing, and in some cases more than a hundred pounds; but I have observed a neighbor who has lived half a mile from where

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I live. Seventeen years ago he was owing $2,500. He was a young man then. He had three forties of land. He hadn't any house that was good for anything. He hadn't any barn. He hadn't a buggy. He hadn't a sleigh nor a robe nor he hadn't a child. He wouldn't feed one bushel of oats to any animal if it was worth 25 cents. He wouldn't feed a wisp of hay if it was worth $10 a ton. He has paid up that debt. He has built a nice house that not one farmer out of fifty has got as nice a honse; he has built a nice barn; he has got three children and is educating them well; he has got a buggy, robes, sleigh and money at interest today; and I right neighbor to him have been crawling along hardly making a living. I fed the 100 pounds and he fed nothing. (Laughter.)

Prof. Henry—You ought to have bought his breed of hogs and horses.

Mr. Kleinfelter—I would ask the professor at what age he would fatten his hogs and put them on the market.

Prof. Henry—Our pigs are disposed of mostly at from six to eight months; but I don't think that we need necessarily have pigs farrowed in the spring and sold in the fall. If you can keep a pig weighing 75 pounds on a pound and three tenths of food a day I think perhaps we can carry pigs through the winter as shoats profitably. Have the pigs farrowed in the summer, and fatten and have them for the Chicago market the next summer. That requires better farming and higher judgment. Let the Iowa farmer and the Illinois farmer, in the heart of the corn belt, sell his hogs in Chicago in November and December and let us from Wisconsin carry our hogs over until summer rather more than we have been doing. If our pigs are farrowed in the summer, they are small and growing in the winter and do not eat much, and then fattened off in the summer we can catch the market when it is high. This year we have had a high winter market, but this is the exception and not the rule.

Mr. Anderson—I will say the professor has just given my experience. I scarcely ever try to fatten off a summer pig, especially if it comes about harvest time. Last winter

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pork was very low. I wintered over all my summer pigs. This summer I had them on clover, and fed them corn even when they were on clover; then I had about twelve acres of peas and turned them in on those. I sold too early. I only got $5.30. I had quite a number of hogs. They fatted nicely. I can winter a hog and keep him growing a little by feeding him two feeds of corn a day and one of oats. I spread the oats out on a plank floor and the corn also. He will be in a nice condition in the spring to turn on to my Alsike clover pasture. He will grow faster by giving a little corn until the pasture becomes good. He will perhaps go in in the month of June and my peas which were sowed early come in about July, and I turn the hogs into the peas and tell them to take them and they generally obey orders. I think it is not always best to rush little pigs into the market. There is now an over supply of small, poor hogs running into the Chicago market, I see by the *Breeder's Gazette* and other reports. Everybody is trying to get them into the market before the price goes down. I think next June hogs will bring a good price. I haven't sold one and don't intend to sell any before June next, and I think I will get them to weigh about double what they weigh now.

Mr. Kleinfelter—I would like to ask Mr. Anderson in what way he sows his peas.

Mr. Anderson—With a drill. Hoard's *Dairyman* says to plow them under. I tried that once and lost my crop. Put them into a force-feed drill. They will never fail when you drill peas in.

Prof. Henry—How deep ought the drill teeth to go?

Mr. Anderson—Perhaps three or four inches. I set my drill as deep as I can on spring plowed land. On fall plowed land you can't get them in so deep.

Mr. Kleinfelter—Wouldn't it be well to plant oats with them?

Mr. Anderson—No sir. I tried that. I had thirty acres of peas one year and on one side of the field I had fifteen or twenty acres of corn. I thought I would have to build a fence through, but didn't have the fencing material, so I turned the hogs into the peas and they didn't bother the

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corn as long as the peas were there. At that time I had over 300 hogs. I am satisfied that hogs would rather have peas than corn.

Mr. Kleinfelter—Professor, isn't there certain seasons when hogs will fatten better than other seasons?

Prof. Henry—Now let the farmers here answer that from their practical experience. Let me throw one ray of light —I don't know that it is a ray—but here is something curious. These ten pigs that I have just referred to lived on a pound and three-tenths when they weighed 75 pounds in cold weather, in a shed not any too warm, but still comfortable for hogs. It took just the same amount of food for the same size of pig last summer as it did this winter. I don't know why that is. I can't understand it. As a rule I doubt if a man can fatten a hog as well in winter as in summer.

Mr. Arnold—There is just as big an effort of nature to keep out the heat as there is to keep out the cold.

Mr. Kleinfelter—My experience in raising pigs for the market has been that the quicker you can get them into the market the more money there is in it. I have raised a great many pigs and I made it a practice always to turn my pigs onto the market when ten months old. I recollect about fourteen years ago I had 67 head of pigs and when they were ten months old they averaged 262 pounds. I think that they paid me by turning them off as soon as that.

Mr. Grisim—I would like to ask the gentleman if he knows what those pigs cost him.

Mr. Kleinfelter—No, sir; I didn't keep any account of what they cost.

Mr. Grisim—That's what I thought.

Mr. Martin—I have had a little experience in this pig business myself. There is one thing that I want to suggest. I think there are two seasons in the year, about March and September, that we strike the best market. It has not been so this year. This year is an exception. This matter of rushing hogs onto the market in poor condition is not confined to the Chicago market. It is true of all the markets. Let me say to you that you needn't be afraid to

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run your hogs a little longer, a little further and a little older than you have been in the habit of doing. They can't get the price of hogs down.

Mr. Clark—Until they raise more.

Mr. Martin—Until the unborn pig comes into the market.

Mr. Anderson—The supply in the Chicago market was over a million less than last year.

Mr. Martin—I have been buying and raising hogs for a term of years and I have been trying to get the thing down to the proper time to market those hogs, and I will say that for a term of years I have received the best results in about March or September. I believe that a hog will fatten faster in cold weather than in hot weather if a man has got good fair hog barns. They must not be too warm. He must have his hog barns warm for winter breeding, but I mean for shoats, etc. If he has got a good comfortable hog barn he can make his pork just as cheap in the winter as he can in the summer, aside from the clovers and green feeds which he has in the summer. And another thing: I presume there are a great many farmers in my hearing who can testify to the fact that the great trouble with the average farmer is that he goes out of things at the wrong time.

Mr. Clark—That is right.

Mr. Martin—He says: "Oh, confound hogs. I don't want any more of them; they are only worth three to three and a half cents a pound." And where are you today? You haven't got any hogs. It is just so with your sheep, cows and all your stock. Keep a little of everything in the stock line, and you are going to strike some of the good prices. That is the reason of the high price of pork today, the eternal propensity of the farmer to go out because he is not getting the highest price for that thing at that time. That is my thorough conviction that a little of every kind of stock must be kept, even if you can't see the dollar at that time.

Mr. Grisim—Wouldn't a man be just as well without them as to sell them at $2.60 a hundred.

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Mr. Martin—Yes, but where is he going to get them when they are worth $8.

Mr. Grisim—If he had them they wouldn't be worth $8.

Mr. Martin—If he hadn't them he wouldn't have them when they are worth $8.

Mr. Chamberlain—I want to ask the gentleman what he is going to do when he has all his hogs die with hog cholera? That is the great reason why people are out of hogs.

Mr. Martin—That is for you hog cholera pestered fellows to decide.

Mr. Chamberlain—That is the reason that hogs are scarce today and people have gone out of them.

Mr. Martin—Isn't the hog cholera question, to a certain extent, and perhaps to a great extent, due to their handling, their management and their care?

Mr. Anderson—It is as contagious as small-pox.

Mr. Martin—Where does small-pox come from?

Mr. Anderson—"That is your question," as Paddy says, "answer it yourself."

Mr. Martin—Where do your contagious diseases originate?

Mr. Clark—I would like to have Prof. Henry explain or state if he doesn't think that hog cholera originates very much from one particular food, that is corn. If diversified foods wouldn't prevent much of the hog cholera that is so very common throughout the southern part of this state and Illinois.

Prof. Henry—Mr. Clark asks if improper feeding does not produce hog cholera, and this being largely due to the excessive use of corn. Yes and no. It is generally conceded that the abuse of the hog makes him very susceptible to disease and much of the abuse comes through excessive corn feeding. In the heart of the hog country cholera of course bothers them the worst, and there are the most hogs there to take it. Excessive corn feeding does not cause hog cholera in and of itself, but puts hogs in condition to fall prey to the disease when it strikes them. We, in Wisconsin, can raise very fine hogs and

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make the best pork to be made in America, and there ought to come a time when Wisconsin hogs will sell for more than Iowa hogs if juicy, nutritious, lean meat is worth more than fat meat, and it ought to be. That time is going to come through our dairy enabling us to feed milk and whey and through clover and pea fields, which they cannot grow so well south of us. We are going to have less cholera and better flavored pork and if we work right we will get higher prices. Don't think that if you keep hogs clean that you can get rid of the cholera. It originates in filth, but it will go to the farms where they have the most carefully kept hogs. Hass's hog remedy or Smith's won't keep it out.

Mr. Martin—What are the conveniences and methods of handling those hogs in the corn belt? Is he bedded, and is he shedded and kept out of filth; or is he brought up so that he don't know anything but filth?

Prof. Henry—I have known hog cholera to kill hogs right on the best of farms. Here is Mr. Kizer, who lost a large number from that disease.

Mr. Anderson—Mr. Kizer can tell you how it came there It was through a carload of shoats that a man thought he was buying cheap in Chicago, that came from Missouri.

Mr. Kizer—This man he speaks, I believe, is Mr. Salsbury of Oak Hill, this county. He went to Chicago to buy hogs because he could buy them for two and a quarter cents when they were worth about four up here. He bought a lot of hogs that had been shipped up from Missouri. He brought them up into our neighborhood and drove them right by our place. His hogs commenced dying as he took them off the car, and he buried them along the road. He got them home, and about that time he began to ship them back again. His hogs at home were taken with it, my hogs were taken, and Mr. Fox's hogs were taken with it, and they were taken with it all through the country. I do not think we would have any hog cholera in that neighborhood if it hadn't been brought there. We never had anything of the kind before.

Mr. Clark—Have you ever had any since?

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Mr. Kizer—No.

Prof. Henry—What per cent. of your hogs died?

Mr. Kizer—I had about 115 hogs, and I lost 95, from 25 pound pigs up to 300 pound hogs.

Mr. Clark—It didn't originate with you?

Mr. Kizer—Not at all. I don't think we would have had it there.

The President—During what length of time did you lose these?

Mr. Kizer—We lost them from along in the spring some time, I think, until the fore part of the winter when it began to get cool and we had frost. Then we got rid of it.

Mr. Arnold—I think the main reason why we can keep hogs in the winter cheaper than we can in the summer, saying nothing about the clover feed—that is that we can fatten a hog easier in winter than in summer—is because they travel around less. The experiments Prof. Henry speaks of prove exactly what we have learned to believe all the time, that when the animal is growing it pays to feed it, when it is small and consumes more in proportion to its size to keep up the life. But there may be conditions when it would pay better to keep large hogs, which we as farmers do not want to ignore. Now I have ten large breeding sows perhaps weighing 450 pounds, and twenty this year's sows; and I feed them all alike. It will pay me to keep those large sows, because I can get pigs from them that will be stronger and better. The difference is that those large sows are in good condition and they lay still, lay in the straw covered up most of the time like a lot of bears. You don't see them only when they come out to eat. The pigs are more active, and it takes more to support those pigs than the old hogs. But I am not simply keeping the pigs alive. I am keeping them growing, and that has got to been accounted for. In those conditions it is sometimes profitable to keep an old hog, especially if we want to raise good pigs. That is the reason you get better pigs from a breeder than anybody else. They have used sires and dams that have come to maturity, and the pigs have got good vitality and therefore produce better. I think any breeder

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will say that he has got to keep old sows in order to have good pigs.

Prof. Henry—It has occurred to me to call your attention to one point: There has one thing come to me after considerable experience and that is keeping hogs on the ground in the winter. You will notice that our hogs sleep on the ground; we are done with having hogs lie on planks. We put straw bedding on the ground and arrange it so that there is no draught under the animals as they lie in their nest. I saw a farmer the other day who said: "I must fix my hog house up and I will have to put a new floor where the hogs sleep." I said: "Don't do it. Keep rings in the hogs' noses if necessary, but let them lie on the ground." I wish some of you would notice in our red barn the comfort of those hogs. I don't believe hogs can be kept more comfortably than they are. In the regular hog barn for some reason I can't make as good a pen as in the red barn which was not intended for a hog house at all. When a hog sleeps on the floor, the air gets under, and that seems to ruin the animal. They get sore in the loin and have more troubles and ailments than when they lie on the ground. We give them enough straw to lie pretty well covered in; and have a space set off by a plank on edge for the droppings. We put straw for bedding and then two or three times a week clean out this hog-pen and the amount of manure that will accumulate would surprise you. During the winter the dirt of the floor will be worked out so that it will require several loads of earth the next fall to fill up again; but the dirt has soaked up the excrements and will go out to the field, and you can afford to fill the pen up again. Of course there should be a floor where the animals are fed.

Mr. Arnold—Won't all domestic animals keep better on the ground?

Prof. Henry—Close to the ground.

Mr. Grisim—Did those hogs sleep on the ground?

Prof. Henry—Yes.

Mr. Grisim—I tried that, and mine slept *in* the ground. (Laughter.)

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Prof. Henry—Mr. Grisim and I are old friends. We have known each other for years; and if I was to tell Mr. Grisim that we planted our raspberries with the roots in the ground and the stems growing in the air I am sure he would say: "I have planted mine with the stems in the ground and the roots up and they did splendidly. (Laughter.)

Mr. Fisher—I would like to ask the professor if he can give us any information in regard to why it is that old sows eat their pigs and what the preventive is. I see that some advocate keeping old sows for breeding purposes. My experience is that I would get lots of pigs, and they would eat them up. Why did they do that and what is the preventive?

Mr. Arnold—There is no trouble about that. I never had a sow eat her pigs yet, and I most always use old sows. If you keep a sow confined and feed her on corn and she becomes costive she will surely eat her pigs. I never had so good success with my pigs as when feeding raw oats. You need'nt go to the expense of grinding. Spread it out on a plank floor and give the hogs plenty of exercise. If I can possibly get hold of any meat for my sows before it is time for them to have the pigs, I give them some meat; and if they have meat that has some fat on it, it will put their bowels in just the right condition.

Mr. Clark—Wouldn't shorts answer as well as oats?

Mr. Arnold—Shorts are first rate.

Mr. Martin—I beg to differ with my friend Arnold about this matter of breeding entirely from old sows or large sows. I was of that impression and kept them until I got tired of it. I breed from young sows, about fifteen or twenty months old, and my experience is that not over the second litter of pigs will I try to get from one sow. I will admit, gentlemen, that I get stronger pigs from old sows, but I get more pigs from my first and second litters than I ever get afterwards.

Mr. Anderson—Don't you keep your old sows too fat?

Mr. Martin—No, sir. I don't keep them at all.

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Mr. Clark—At what age do you allow them to farrow first?

Mr. Martin—About fourteen months old. The second litter I get better, and after that I never have done as well.

Mr. Arnold—That is all right if a man don't care anything about the pigs, only just to fatten and get rid of them. The pigs will get shorter lived, and have a weaker constitution. That in my opinion is why we have so much hog cholera, we are feeding at too high a pressure. The hog is naturally a grazing animal. He is a forager. He eats grass and very little grain. Kept in that way he wouldn't be desirable, but he would maintain his vitality.

The President—You don't think our old prairie rooters would ever have hog cholera?

Mr. Arnold—No, sir.

Mr. Martin—If you will take the trouble to come out to my farm some day and look at my hogs, particularly at my young sows, I think I can convince you that they are good.

Mr. Grisim—In feeding oats it is a very good plan to have the turkeys and hens follow hogs. And speaking about old sows and young sows, I had one sow that I kept until she brought me in six litters, and the last litter was the best.

The President—We will have a paper now on "The General Management of Farm Stock," by C. H. Everett, of Beloit. The paper will be read by the secretary.

The Secretary—Mr. C. H. Everett has prepared a paper which I will attempt to read in your hearing. He designed to be here, but in the present condition of the railroads while doubtless endeavoring to reach here this afternoon, he has not been able to get here at this time. I can vouch for the paper as being reliable upon this important subject of the general management of farm stock.

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GENERAL MANAGEMENT OF FARM STOCK.

C. H. EVERETT.

I am well aware that you may differ from me in my treatment of this subject, and I trust that the discussion that will follow may point out to you the best methods to be adopted, which is, I am sure, the object of meetings of this kind.

However much we may perfect ourselves in the science of breeding and feeding, the fact still remains that if further care and management be ignored our efforts will avail us nothing, for how long will it take to reduce the 300 pound dairy cow, by exposure and rough treatment, to the level of the scrub. Without method, thought, skill and patience in the care bestowed, everything on the farm, from the chicken to the farmer himself, will degenerate.

Our farm animals are dependent on man, even for their existence. They cannot ask us for something to eat or drink, or tell us to put them under cover away from the cold storms; yet the careful manager reads and interprets their wants with a keen eye and clear understanding, made perfect by experience, experiment, observation and a careful and patient study of chemistry as it works out and unfolds the mysteries of animal growth.

The marvelous progress made in the arts and professions during the last quarter of a century has been the theme of eulogies from the pens of hundreds of writers, and not without reason, for the discovery and application of science has been of sufficient magnitude to surpass the most visionary expectations of the wildest enthusiast. In view of these gratifying results in the professional arena, it may be well for the stockman to pause long enough to ask himself if a like progress has been made in the live stock industry. If not, how can we hope to retain our position in the competitive ranks of humanity. But it may be argued that this industry has kept pace with other branches in the line of progress. Compare the modern dairy cow with the

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native of a few years age, take the patient short horn, the draft horse, the roadster, the sheep, swine, fowls, etc. Is there any improvement? And has it been brought about by indifference, neglect and ignorance of the laws of breeding and feeding, or is it the result of years of patient study and experiments, with a definite purpose in view. The gratifying results that have been achieved in the improvement of our live stock is but the fruit of man's mind; and it will ever be so.

Grass, perhaps, forms the most perfect single ration known to the feeder, and during five or six months of the year the pasture is the home of the stock, but too often we find stock that have no other place on the farm for seven or eight months of the year. I know of men who never shut the gate that connects the pasture and yard, the animals are allowed free access to the pasture at all times; the observing man will often see poor stock wandering over the pastures in March and April, in search of a spear of grass, and many of our farmers who are not in the habit of following such methods with their stock, will turn to grass two or three weeks too soon if they happen to be short of hay and it is a trifle high in price. Where pastures are so treated there is never any feed, and the stock is always poor. Many pastures contain no shelter, not even a tree to protect the stock from the sun, and more than this I have seen cattle stand in stagnant pools of water to get away from the heat and flies, and they were forced to drink the same impure, filthy water or go without. I might follow this kind of a farmer to his winter care of stock; with cold stables, poor and insufficient feed, and a hole in the ice for a water supply, but time will not permit, nor do you care to hear it, yet this is one kind of management, and I only allude to it in this paper in hopes that it may sometime fall under the eye of some of those men with dwarfed intellects, who, like our highways, can become no worse, but may be greatly improved. It is only with our agricultural literature and the examples set by good farmers, that we may hope to reach them, for they are seldom found in meetings of this kind, or in our Farmers' Institutes.

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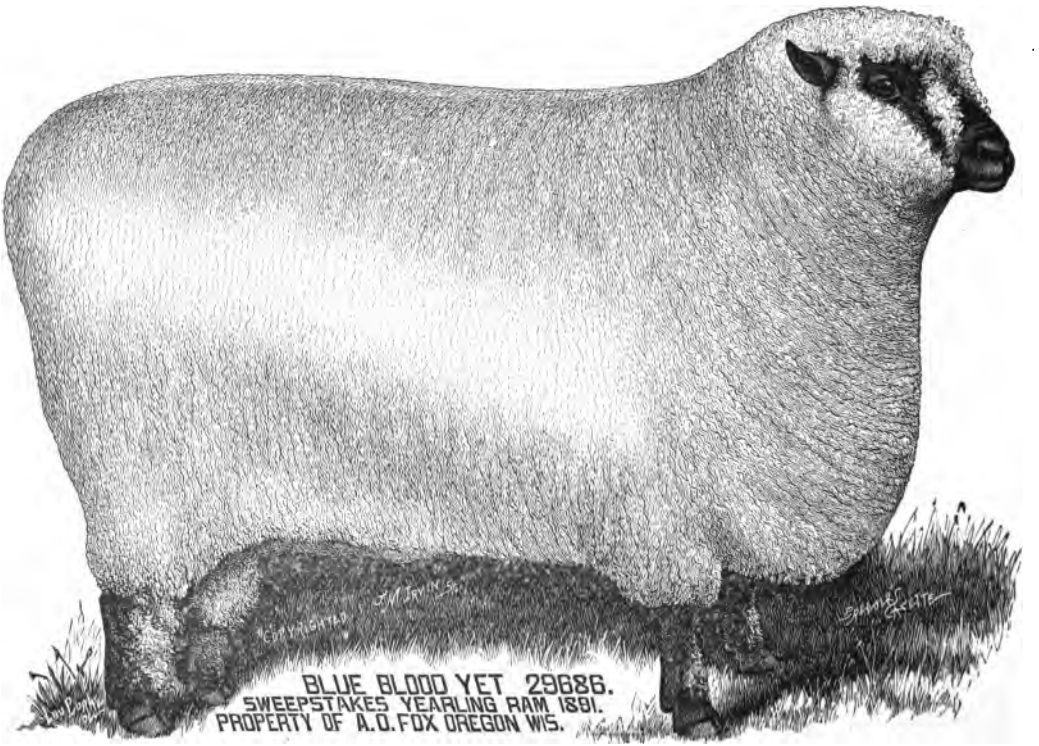

Sweepstakes Shropshire Ram at the head of Woodside Flock,

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The first essential to success in the animal industry is good stock. Every farmer must decide for himself how much and what kind of stock he will carry. The amount will depend upon the situation of the farm, the nature of the soil, climate, water facilities and other contingencies that must be studied. Whatever the stock, the best is the cheapest, always. The power of assimilation is greater in the well-bred animal, and through this enhanced power to assimilate and convert food to the use intended the well-bred animal has the advantage over the scrub. Cattle should have flush pastures. Clover and the legumes are favorite foods for swine. Sheep, like the horse, prefer rather short pastures of diversified grasses. Stock should not be turned to pasture in the spring until the grass is four to six inches high; then the grass has become firmly rooted and a good sod is formed which will further protect the tender grass roots. There is also more nutriment in the more mature grass and a less amount is required by the animal, causing less injury to the pasture, for the better the feed the less tramping is done in the early part of the season. A pasture so treated will, unless over-stocked or severe drought sets in, remain good through the season. Pastures should never be over-stocked; it not only injures the pasture, but lessens the profits to be derived from the business. Better dispose of a few head and give the balance better feed and care, for now-a-days it is only the best of any kind that pays a profit. Stock should be provided with shelter when in pasture, if nothing more than a few trees; if there is no shelter of this kind cheap sheds should be erected. Without protection of some kind during the hot months animals often suffer greatly and are even liable to sunstroke. It is necessary that sheep be kept from all storms until sheared; the profit to be derived from quality and quantity of fleece, as well as the thrifty condition of the sheep, demand such attention.

Good pure water is all important and if the pastures are not naturally provided then nothing will pay better than a good well and self regulating wind mill. No animal ever thrived without pure water in abundance, and the man

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who will force his animals to drink from a mud hole should have some of the same death-dealing liquid poured down his own throat. Stock should have free access to salt. I have a couple of strong boxes in the pasture that are kept partly filled with salt. It is not advisable to pasture cattle and sheep together; were I keeping both on the same farm I would arrange, if possible, to divide the pasture into three fields, allowing the cattle to graze one week on pasture number one, then turn to pasture number two and follow on number one with the sheep, keeping the sheep one week behind the cattle. This gives each field in turn a rest, at the same time the cattle are provided with the more flush feed, while the sheep get that which is shorter and more to their liking. The wise farmer will sow clover with all small grain, this will furnish an agreeable change for the stock and will be beneficial to both stock and pasture.

To the stock-breeder and feeder and especially to the dairymen, the question of forage plants to tide over summer droughts, and the preparation of some succulent food for winter use is of prime importance. Fattening stock cannot be kept thriving during July and August on pasture alone, except when we have continued rains and cool weather to hold the pastures flush, and the milch cow will always shrink. The want may be fairly met with rye, oats and peas, sweet corn, yankee corn, millet, etc. Ensilage is an essential aid for cattle and sheep in winter, fed in connection with other food, and especially so for cows giving milk. I always manage to have a sufficient amount to carry the stock through until the pastures are flush, as fall advances, and the grass becomes less succulent, especially after the first hard frost or two, unless special care is exercised the stock will shrink in flesh or milk. The successful feeder will watch his animals closely at such times, and be ever ready to keep up the condition by adding or increasing the grain ration. We should always remember that it costs money to put on a pound of gain, and it is not good economy to allow the animal to ever shrink in flesh. The man who feeds from birth and keeps his stock growing constantly until ripe for the market, makes the most profit,

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and it is well known to the practical feeder that the older the animal the less the average gain from birth, and the greater the cost of production.

In fattening steers I prefer to begin feeding grain in the fall while the cattle are yet on grass, gradually increasing the feed as they go to winter quarters. I much prefer to dehorn the cattle and turn them loose in close sheds. By littering the stable every day with straw the cattle are kept clean, and the manure is all saved and in fine condition the following fall, to apply to the meadow. Shoats should have access to the stable during the day but should be shut out at night, before the stables are littered. The main essentials of good stables are light, warmth and ventilation. The cow and hog require warm quarters; the horse and sheep require less warmth, but should have dry quarters at all times. I find but one objection to basement barns for cattle, it is very seldom that you will find such a stable that is well lighted, and good ventilation is not as easily obtained as in stables above ground. My idea of a model dairy barn would place it wholly above ground, with cows in two rows the long way of the building. The floor overhead I would have perfectly tight and the sides double boarded to the second floor, good large windows, all round, with ventilators running up the sides of the barn from the floor. All stock should be fed and cared for with regularity, for feeding much or little, as it may happen, without regard to system or regularity, will impair the digestive organs, cause an irregular appetite, and render the animal at times off-feed, and out of condition. Such conditions naturally lessen the power of assimilation, and cause disarrangement of the whole system. Especially is this true at this time of the year, when we are feeding the more concentrated and less easily digested foods. In order that we may become intelligent feeders of live stock, we must study and understand the composition of feeds. Such knowledge enables the feeder to compound a ration that will produce the desired results with the most economy.

In the management of my dairy herd I arrange to have the most of the cows fresh in milk in September and Octo-

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ber, with a few in April to maintain the quality of milk. It is my aim to so feed and care for the cows that there will be no shrinkage in the product. I feed heavy—to the full limit of the cow's capacity to convert the feed to milk. I feed and milk at stated times—use the stanchion with slatted floors and bed liberally with straw. A stone boat is used to convey the manure direct to the field every day. My cows never drink ice water. I give them salt once a day, do not consider exercise at all necessary, and keep them closely confined to stables in cold or stormy weather.

I keep nothing but pure bred swine, having learned from experience, that a well-bred hog will make more pork from a given amount of feed than the hog will with little or no breeding. I feed for bone, muscle and rapid and healthy growth. Skim milk, wheat shorts, oats and peas, clover and blue grass are the most essential foods for growing swine. Like the cows, my hogs never get any ice water. I provide warm, dry quarters for winter, not allowing more than ten to nest together, and changing the bed twice a week.

As I make no pretensions in the line of horse breeding, and do not keep sheep, I prefer to leave this part of my subject for someone else to discuss.

The President—The paper of Mr. Everett is before the convention for discussion.

Mr. Grisim—I wish he were here we would ask him some questions.

Mr. Martin—If Mr. Everett was here I should go right for his scalp on the theory that horses don't need as warm barns as hogs and cows. We know that sheep cannot stand warm barns, but evidently he must calculate to use his horses in the place of sheep and shear them. He has got to shear them as sheep in order to keep them protected, as he classes them with sheep. There is no animal on earth, domestic animal, that we are using that wants more comfortable barns than our horses. We can't afford to have horses with wool on them to shear. We want horses

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to use. We want his coat smooth and clean and nice and so that he can stand work on the road.

The Secretary—Do you blanket your horses in the winter?

Mr. Martin—I blanket my driving horses, but my team horses I do not blanket in the barn except when they come in wet or damp.

Mr. Anderson—I think it is a great mistake to blanket horses in the barn. My barn is a bank barn. I have plenty of ventilation. I have hay funnels to put down hay for my cattle. I have warm water. I have a heater which only cost me $5 that fills the bill well. It is about two feet and a half long and about two feet deep, and very little wood is required. It is made of galvanized iron. I have got a tank which is sixteen feet long, four feet wide and about thirty inches deep. I can warm that up very quick. The first thing I do in the morning I make a fire out there after breakfast. My cows are milking better this winter, the same number, than last summer, and I attribute it to the ensilage, the warm water and plenty of bran and hay; and in the middle of the day I turn them out, and I have a long feed rack where they can go and eat what straw they want. I am in favor of bank barns, but I would not blanket a horse in the barn at all. He feels the cold so much worse when he goes out. If I drive a horse I take blankets along and put them on when I get to the creamery.

The Secretary—Having read Mr. Everett's paper, perhaps I ought to stand by it as far as I can consistently. I am hardly able to accept the doctrine advanced by Mr. Martin, on general terms, that the horse needs as warm a stable as the cow. I think it is generally admitted by successful handlers of Jersey cows that the stable should be so warm that there never should be any great appearance of frost in it. I would think that these conditions are not necessary for colts. I want my colts to take exercise out doors every day unless it is wet or stormy. If a horse or a colt was turned out from a stable that was very warm, like one we are speaking of, into cold air where the thermome-

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ter was ten to fifteen degrees below zero, it is questionable whether that abrupt change might not be disadvantageous. I wouldn't want a cold or an open barn. I have two stables, one a basement and the other an up-stairs stable, where I keep my horses and I know that my horses do better and are in a more satisfactory condition kept on the upper floor than those which are kept in the basement barn. I would put cattle in the basement barn and keep it as warm as possible. I think while horses should have a warmer stable than sheep, still I would place it midway between the temperature required for the dairy cow and the sheep.

Mr. Stiles—In Vermont they have yards where they run in, and are well fed, and may be fastened in away from the storm and snow, and they think horses do better to be in an open shed where they are always out and take exercise when they want it. I was informed in Nebraska that they did not consider it necessary for young stock horses to be stabled at any time. They would not keep them out in a blizzard or hail storm, but it is not expedient or necessary to keep them in a stable.

Mr. Lippet—I believe more horses contract disease from a stable in the winter season, where the frost would not collect on the walls, than there would be if the horses were turned out of doors even. But give me a stable above, as Mr. True has described. If any of you have a veterinary in your community you will find that he is running to the man with that warm stable to take care of his horses. Being confined there in the night time, and when not in use in the day time, the change is too abrupt. They take cold much more easily, and 90 per cent of the diseases start from cold.

Mr. Grisim—I would like to ask Mr. Anderson if his cows are more profit to him in the winter than in the summer?

Mr. Anderson—I believe they are, and I think it costs me a little more to feedcows in the winter, but I get double the price for my milk in the winter that I do in the summer. The way I have got my silo situated it is very little trouble to feed. I have

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a bank barn built on the side of a hill and it is level above the first floor of the barn away back, so that the bottom of the silo is as high up as the floor of our cow stable. I have built right against my barn. I have cut a doorway three feet wide and we commence feeding from the top of the silo and pitch it down hill right on to the plank floor below. We mix it with bran shorts, or whatever we have; sometimes ground corn or oats. I think I am making a good deal more out of my winter cows this year than I did in the summer. I know that it takes a good deal of land to pasture cattle and give them all they will eat. As Mr. Everett stated here I have followed that practice and let my sheep go one week in the field after the cows. I let the cows go ahead and take the best of the pasture and the sheep follow after, week after week. I have running water most of the time in my pasture and I have a shed. I settled right on the prairie, but I have got a grove, or woods you might say almost, on my place. I have been accused of having a mania for planting trees. I even have walnut trees. I believe in having everything comfortable. My horse stable is not so warm but what it will freeze some such days as this, but my horses have a yard in which they can play out doors; horses and colts. I never have any trouble with horses being sick. My barn is well ventilated. I insist on my men cleaning out the stable every day. Sometimes I cover the floor thickly with land plaster to prevent the smell, and it doesn't hurt the manure.

Mr. Grisim—About making cows drink clean water, that is the biggest nonsense that ever a man talked. A cow won't drink clean water if she can get dirty water.

The Secretary—I rather think that my friend Grisim's cows partake somewhat of the nature that he manifests at our meeting, bound to be a little on the off side.

Mr. Martin—I notice that Mr. True when he comes to Madison is hunting for a pretty warm place to stay. He don't like to go to a cold hotel, but goes off to some friend's where they have got a nice warm comfortable place to hang

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out. When he comes up in our country about the first thing he inquires is "Have you got a warm room?"

The Secretary—I always go to Martin's when I'm up that way.

Mr. Martin—I think it is so with a horse. I will admit that the milch cow is a much more sensitive animal than the horse and that the horse can get along with a colder barn than the cow, but I don't believe in any cold barn for horses, nor I don't believe in any cold barn for colts, nor I don't believe in turning my horses or colts out more than an hour these excessively cold days, and if it is stormy I am not going to turn them out at all.

Mr. Stiles—What kind of floors do you keep them on?

Mr. Martin—Hemlock plank. Gentlemen, I have grown up in this state. I farmed it up in St. Croix county when I had to lean my horses and colts up against the south side of a straw stack. From that I got into a little barn and a little better barn until I began to paper and ship-lap my barns outside, and now I have got good comfortable barns. My horse barn don't freeze and my horses don't get sick. My driving horses I blanket because I like to have them have smooth hair. My other horses are blanketed out doors if they have to go out in the storm with blankets under their harnesses.

Mr. Grisim—About these colts being in the stable. The fattest colts I ever saw were never in a stable after they were sucking colts. They were so fat that you could not feel the ribs on them. They had nothing but just hay and an open shed.

Mr. Martin—I would like to ask the gentleman what breed of colts this was?

The Secretary—I want to say that when the report of what I have said in reference to these stables is read you will find that I did not advocate cold stables. My horse stables are not cold in the sense that we speak of open sheds. although I am aware that some of our best breeders do not confine mares and colts, they having sheds that they can run into. Mr. Kellogg, of Green Bay, a breeder of Percherons, had large barns with doors

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so that the horses could go in if they saw fit, but not warm stables. I would not have a cold stable. I don't believe we have any place for them anywhere. What I mean is an open stable, where you can put your hand through the cracks. But you take a barn set upon a tight wall where there is no under draught, where it is well battened, and I submit that a stable of that kind is quite as well for keeping brood stock and growing colts as one that is warmer. I insist that it is essential that these colts and brood mares should have rather more exercise than my friend Martin talks of allowing his. It should be regular. We must have regularity and system in the way of exercise as well as feeding.

Mr. Blackstock—I think there is just a little injustice done to Mr. Everett and his paper. I don't understand that Mr. Everett recommends cold stables for horses, nor for sheep. He simply claims that it is not necessary to have as warm a stable for horses and for sheep as it is for hogs and for cows. I agree with him. I think he is correct. I think you must all, if you stop and think about it, agreee with him. It seems to me it stands to reason that a milch cow and a hog, that you are feeding for the purpose of putting on as much flesh as you can within three or four months, need better care I might say, a warmer stable, than the horse; especially the colt; even the grown horse. Now I think that stands to reason, and that is all he claims. He doesn't advocate cold stables for his horses nor for his sheep, but you can keep horses and sheep in stables that are not quite as warm, and they will do as well, as your stables should be for milch cows and hogs. In regard to blanketing a horse, I think it is a humbug. I have had some experience in that myself, and my experience is that the less you blanket a horse the better. There are times, it is true, when it is necessary and best to do it. If you drive a horse in a very cold winter day and frosty and he gets warm and you have to let him stand at the post with the wind blowing on him, it is well enough to put on a blanket. It is only in experiences of this kind. I never use a blanket on my driving horses at all. I want

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to say these few words in defense of that paper. A good many got the idea that Mr. Everett had recommended that we keep our horses and sheep in cold stables.

The President—I don't think there has been any criticism of the paper. I think some have been disposed to criticise his injudicious friends here.

Mr. Martin—I would like to say a word to the farmers here. If any of you have not been out to the experimental farm and station, and the various schools, etc., don't go home until you go out there. I have been down here a good many times and have always wanted to go out there and have always wanted to get the next train home. I did come pretty near going home at twelve o'clock today, but I hadn't seen Morrison, and I was induced to go out there with him. He took me through the whole business. Well, I had some idea of what they were doing, but I hadn't an idea of one-quarter what they were doing out there. I wan't to tell you gentlemen it is simply immense, the facilities which they are giving to the young farmer; and if some of us older fellows would go out there and stay a few days it wouldn't hurt us. I have learned more about some things out there, relative to the butter interests, than I had known for some time; and I am willing to learn more. But you go out there and see what is going on for yourselves, and if you have got a son or two and you have got so much money you don't know what to do with it, send them to this school; or if you have not, send somebody else's son out there, and let him get a little better knowledge of these things than you and I have got.

The President—This session will close at this point. To-night we will have in the assembly chamber a discussion touching the good road question. It will be a most interesting session I have no doubt, as some of the ablest speakers in the state will participate. As soon as the addresses have been concluded this evening we hope to have a sort of running debate there, in which I hope you will all take a whirl, so as to draw out what is known with respect to this subject. Let us have a free and full discussion in respect to this subject. There are a few of the bills

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that have been presented to the legislature here on the table. If any of you desire to examine the bill which will be the basis of that discussion, I hope you will do so. I would like to say also that I hope as many as can will remain through the entire convention through the week.

Adjourned until Wednesday evening, February 8th, at 7:30 P. M.

WEDNESDAY EVENING, Feb. 8th, 1893, 7:30 P. M.

The President—The exercises of the evening will begin with music by the University Mandolin club.

Music was furnished by the University Mandolin club.

The President—Ladies and gentlemen, it is a special pleasure to introduce John M. Olin, Esq, of this state, who will address you upon the subject of better roads.

BETTER ROADS—A PLAN FOR IMPROVING COUNTY HIGHWAYS IN WISCONSIN.

By JOHN M. OLIN.

Members of the State Agricultural Society: — The selecting by your honorable secretary of one of my profession to address a convention of farmers on the subject of our country highways may be evidence to you of a lack of judgment in your secretary, and my acceptance of his courteous invitation may be evidence of bad taste on my part. But it must be remenmbred that the farmers, though most directly and deeply interested in the subject of good roads, are not the only class thus interested. "Every member of society," as stated in a recent number of The Forum, by Ex-Governor Beaver, of Pennsylvania, "is interested in the public road. At birth, at death, and at all intermediate points during life, it is used, to a greater or less degree, by or for every individual member of society. It carries the doctor to the bed-side of the sick, the minister to administer consolation to the house of mourning, and

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the dead to their graves. It brings purchaser and consumer together. It is the avenue alike of pleasure and of traffic. The farmer seeking his market, the commercial traveler looking for customers, and the millionaire in search for enjoyment in his coach-and-four, the wheel-man in pursuit of health, the few seeking pleasure or profit on wheels, and the many in like pursuits on foot—all are interested in the public road."

THE PEOPLE AROUSED.

It is encouraging that the American people are at last becoming thoroughly aroused as to the importance of good roads. Within the past year able articles on the subject have appeared in our leading magazines, such as the Atlantic Monthly, The Forum, and the Century, written by such men as Prof. Shaler, of Harvard, Isaac B. Potter, of New York, and Ex-Governor Beaver, of Pennsylvania. In January, 1892, a monthly periodical, called Good Roads, was established. It was devoted almost exclusively to the subject of road improvement. It treats the subject in an able and scholarly manner and is full of valuable and practical information. There is to be a road improvement department maintained at the world's fair, where will be exhibited to all who may visit this, the most marvelous industrial exposition the world has thus far seen, by practical illustration, the results thus far reached in road construction. The newspapers of the country, with scarcely an exception are now discussing this important subject. The movement is endorsed by all classes and by all parties. Within the past two years the governors of Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania, Ohio, Michigan, Illinois, Wisconsin and of other states have called attention to the importance of this subject in their messages to the legislature. Many of them have urged the necessity of immediate legislation. The republicans of Rhode Island and democrats of Minnesota in their last state platform each inserted a plank in favor of good roads, the democratic plank in the platform of our sister state being as follows: "Resolved, that

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we are in favor of a radical change in the laws of this state and demand such legislation as will provide for intelligent and economical supervision of the building and maintenance of our country roads."

In many of the states, commissioners were appointed two years ago to investigate this subject and report to the legislatures now in session. Such reports have just been made in Michigan and Rhode Island. In nearly every state in the union, whose legislature is now in session, some bill is pending for the improvement of country highways. I am gratified to see that our state is not behind in this matter, for already three such bills have been introduced. Farmers' institutes have been agitating this question, and we trust that they will continue to agitate it. The setting aside by your society of one evening for a discussion of "better roads" is conclusive evidence of the farmers interest in this movement.

A NATIONAL DISGRACE.

Nor is it any too soon for the people of this country to become aroused as to the importance of improving our country highways. Of all civilized nations, we rank the lowest in the condition of our highways. Though we are the strongest, wealthiest nation in the world, yet the smallest, weakest, poorest nation on the continent of Europe maintains a system of common public roads that puts us to shame. "In five years time," says Edgar L. Wakeman, "I have tramped along three thousand miles of British roads. Each time I stepped my foot upon their broad, firm, even surface, every drop of American blood in me tingled with shame at the thought of the mud-pikes and the bottomless sloughs of our own splendid country, rich, great and strong enough to match the roads of Europe without a week's delay." The definition of Mr. Brown, master of the Connecticut State Grange, was not far out of the way. "If I were asked," said he, "to give a definition of a country road, I should say it is an imaginary pathway, composed of fearfully realistic quag-mires, washouts, thank-ye-mams

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cobble stones and profanity." Some rhymester, with more truth than poetry, has written:

"This road is not passable,
Not even jackassable.
If you wish to travel it,
You first must go and gravel it."

Our country road, says Isaac B. Potter, who has written so much and so well on this subject, "is the same road that was used a hundred centuries ago by the naked savages when chased by a storm to the sheltering cave, and from him it seems to have descended as an entailed legacy to the American government. In fall these years it has not changed, except that the modern article is more or less churned and mangled by narrow wheel-tires, and flanked by costly and useless fences, two species of property unknown to our primitive ancestors, and first conceived at that latter period which marked the dividing line between instinct and imbecility. Measuring a million miles or more in its various ramifications, dissolving in the rains of April, baking and pulverizing beneath the rays of the mid-summer sun, drifting and disappearing in the whirlwinds of November, and presenting at all times but little more than a roughened streak of soil to serve as a land highway for the great volume of international traffic, the time seems to have come when the American common road may rightfully assert itself as the most expensive, and by all odds the most extravagantly maintained, of all the public institutions. To the intelligent foreigner who comes to our shores, the American "system" of road maintenance is little short of ridiculous; to the thoughtful and inquiring native, it is only a kind of legalized negligence, a relic of feudalism borrowed from England in the old days of government poverty, and placed in the keeping of the most patient and long-suffering of our industrial classes, who have been gradually led by "the ensnaring wiles of custom," to endure and to embrace it.

The same writer, in an excellent article in the Century for April, 1892, says: "Measured by every rule of economy,

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public or private, these common roads of the United States are not only the worst in the civilized world, but in labor and money we are spending more to carry on a 'system' of inefficient and shiftless maintenance than would be sufficient to keep in proper repair double the length of high class roads under the methods pursued by France, Italy and other European states.

But we are here to-night not merely to complain of evils which every one sees and admits, but to suggest a remedy for Wisconsin. This will best be done by referring briefly to the two main causes for the present wretched condition of our roads.

THE TWO CAUSES.

For the last forty years the energy and capital of this country have been devoted to the building of railroads. Those interested in this enterprise have received liberal aid from the nation, the state, the county and the city. An almost unlimited amount of money has been expended in this direction. These roads have been constructed and equipped by the best talent in the nation. They are to-day managed by the most eminent financiers, and are being constantly improved under the supervision of the ablest engineers the country affords. Every improvement in machinery or method of construction that will increase the speed or cheapen the rate of transportation upon these roads is at once adopted, until to-day a ton of freight can be carried over them at a cheaper rate than in any other nation in the world.

CITIES DEVELOPED AT EXPENSE OF COUNTRY.

In this rush for better railroads, our common public highways have been wholly neglected and forgotten. They are in the same condition to-day as forty years ago, "managed" in the same shiftless, expensive and unscientific way. The direct result of this condition of things has been to crowd the centers of population, to develope the city at the expense of the farming community. During the last decade the relative valuation of farm property in

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this country has been rapidly sinking. In the great state of New York, second only in value of its farm crops to any other state in the entire union, the official estimated value of farm lands last year was less than eight per cent. and that of incorporated cities and villages more than ninety-two per cent. of the total taxable values within the state.

GOOD ROADS MORE IMPORTANT THAN RAILROADS TO FARMERS.

No one will question the great benefits of the railroad system of this country to the farming community, but great as these benefits are to the farmers, it is doubtful whether they would not be far surpassed by a complete and thoroughly constructed system of common public highways. Mr. Francis B. Loomis, United States commercial agent at St. Etienne, made a recent report to the Department of State as to the economic worth of such roads to the French government, in which he said:

VALUE OF GOOD ROADS TO FRENCH FARMERS.

"The road system of France has been of far greater value to the country as a means of raising the value of lands, and of putting the small peasant proprietors in easy communication with their markets, than have the railways. It is the opinion of well informed Frenchmen, who have made a practical study of economic problems, that the superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of the country. The far-reaching and splendidly maintained road system has distinctly favored the success of the small landed proprietors, and in their prosperity, and the ensuing distribution of wealth, lies the key to the secret of the wonderful financial vitality and solid prosperity of the French nation."

WRETCHED SYSTEM OF WORKING OUT HIGHWAY TAXES.

The great cause, however, of the poor condition of our country highways is the "system," if such it may be called,

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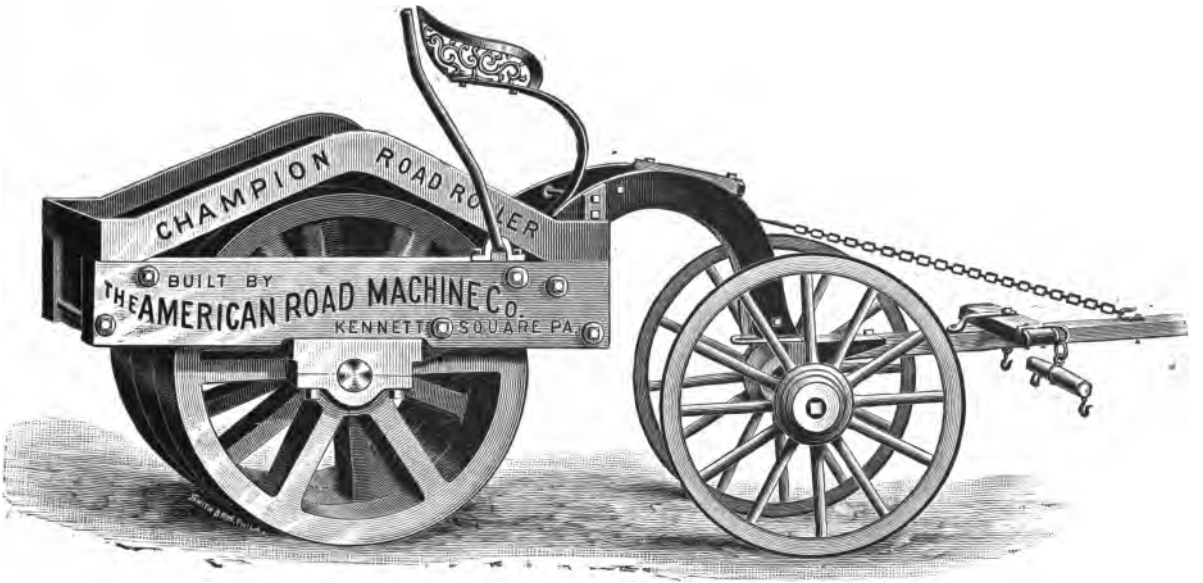

Improved Road Roller.

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of constructing and maintaining them. You all know what this is. If the legislature of Wisconsin should devote all its energies from now until the first of April next in devising some scheme or plan by which the country roads of this state could be kept in the worst possible condition—so that the greatest amount of money could be expended with the least possible service rendered—we seriously question whether the laws now upon our statute book could be improved upon for this purpose. Each town is divided into from six to to ten different road districts. The boundaries of these are shifted and changed with

THE ROAD OVERSEER

each change in the town board. At the annual town meeting a road overseer is elected for each of these districts, by the electors, not of the whole town, but of this district only. And how is this election conducted and what kind of men are chosen? The electors of the town, gather into one room, separated into as many squads as there are road districts. In the midst of confusions, some one is nominated to the office of road overseer of the district. Frequently some one is nominated and elected as a sort of a joke. Generally some person is chosen who will be an easy taskmaster. If by mistake, some person is chosen who makes, for one season, an honest attempt to enforce the law and compel an honest day's work to be done by the tax payer, he is never chosen again. That kind of a mistake is not repeated. Sometimes the person selected is not even a tax payer, and generally he is a person who knows nothing of the first principles of proper road construction. It should be remembered that it requires a good order of intellect to properly construct and properly repair even a common dirt road. But few men in any town are competent to do it, and they are not the men chosen for this office. The overseer frequently holds his office but for a single year. If he should do a good job of work there is no certainty that it will not be spoiled the next year by a new overseer. The taxes though assessed upon the town as a whole are divided

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into as many parts as there are different road districts, and all taxes upon persons and property within any particular district must be expended within the limits of that district. This is local management of our high-ways run mad. The overseer is required to collect the taxes in his own particular district, and how does he do it? By serving notice upon the tax payers to appear at a certain time, in person or by an "able-bodied substitue" to work on that portion of the road in which the overseer is particularly interested.

If the tax payer has a boy or hired man, especially lazy, or for some reason unable to do a fair day's work, he is sent. The old wagon, the old plow, the old scraper, and the old span of horses are selected, and for this kind of a man, team and wagon the town must pay three dollars and a half for eight hours work so-called; that is at the rate of forty-four cents per hour, while in the city of Madison, where the expenses of living and the rate of wages are much higher than in the country, the ruling rate of wages for man, team and wagon has been thirty cents an hour, or three dollars for ten hours work. The day set for the work is a sort of annual picnic where the farmers meet to swap stories and trade horses, and in most cases the work done had better have been left undone. for when the road overseer is through with his job, the last condition of that road is usually seven times worse than its first. The result is just what a reasonable man might expect, for a good road was never built by accident, nor maintained by ignorance. "It is quite as senseless and futile to attempt to build and maintain a good high-way by the calling out of A, B and C from their various personal occupations to mawl and scrape a few miles of soft dirt with hoes and shovels, as it would be to expect the same persons, under a similiar system, to contribute the personal labor in the successful erection of a state house or county penitentiary."

PRESENT SYSTEM EXPENSIVE.

Viewed from any standpoint, this system is a senseless and expensive one. Each overseer is allowed one dollar and fifty cents per day, in addition to five per cent. on all

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taxes collected by him in money. In a town with ten districts this amounts, exclusive of the fee for collection, to fifteen dollars per day. This sum would pay for the services of at least three competent road overseers. The road taxes that are paid in money go into the hands of the overseer. He is allowed to retain the whole amount received, if necessary, to pay him for his services as fixed by the statute. Usually the account is made to balance, for the overseer alone determines the number of days he has "worked." This he does, usually, upon the principle of the clerk who was to be paid so much per hour, and certified to having worked twenty-five hours in one day. The overseer is not even required to give a bond, unless specially ordered to do so by the town board. The Minneapolis Tribune, in an editorial on the subject of road overseers, says: "Irrespective of results, a law that permits the same official to be treasurer and auditor of a public fund, to audit his own accounts, draw warrants upon himself, present to himself and receive the amount from himself, may suit that individual, but is hardly in keeping with other laws for the production of public good. In many localities the strife for this office, which at best should pay no more than fair wages for a day's work, is the very best evidence that its early extinction is ardently desired by the traveling public. On the inefficiency of the present system there can be no honest disagreement, nor any on the deplorable condition of our highways in consequence."

AMOUNT OF TAXES LEVIED UNDER THE PRESENT SYSTEM.

It has not been possible for me to ascertain the amount of taxes levied in any one year by the towns in each county of the state for the maintenance of roads and bridges. But what is true of Dane county is true relatively for the other counties. The amount of taxes levied by the towns in this county for this purpose in 1892 was, in round numbers, $68.000. Generally speaking, the roads of Dane county were in no way benefitted by the levying of this tax. Such a tax, or even one-half thereof, if paid each year in money,

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and wisely expended under competent supervision, would soon give us a system of excellent roads throughout the county.

IF PAID IN MONEY WOULD BUILD GOOD ROADS.

United States Senator Dolph, writing on this subject, says: "I have an impression that if the taxes annually levied in this country were collected in money, and judiciously and economically expended, in a comparatively few years, the principal highways of the country would be put in a reasonably good condition."

EXPERIENCE IN MICHIGAN.

One of the commissioners, appointed by Governor Winans, of Michigan, to report a plan of road legislation for that state, a man who for twenty-five years has been a highway commissioner in his town, which for ten years has collected its road taxes in money, said in a recent letter to me: "I would much prefer twenty-five cents in cash to the average day's highway labor as it has been and is being performed for the past fifty years in our state."

EXPERIENCE IN INDIANA.

"The late Governor Hovey," says Mr. Studebaker, "in his last message to the legislature of Indiana estimated that between two and three millions of dollars in money and labor had been expended upon the roads of the state during the year ending October, 1890. The amount was sufficient to build six or seven hundred miles of substantial macadam roads, of a nature to last, with light repairs, a hundred years. Instead of such an enduring improvement to show for this great outlay, for the most part of the work done was more appropriate for the preparation of an onion bed. It would be better for a country to build five miles of good macadam roads each year, and let the remainder of the roads alone, than to continue the course usually followed."

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MAKE ROAD TAXES PAYABLE IN MONEY.

The first remedy we would propose, then, is to abolish our road overseer and road district system. The town should be made the smallest geographical unit for the management and control of our common highways. The making and repairing of all roads within the town, except as mentioned later, should be given to the town board, with power to appoint a competent person (or persons) as superintendent, who should hold his office for at least three years, and be removed for cause by the town board. All road taxes should be paid in money, to be collected by the town treasurer as other trxes for town purposes are collected, and paid out on the warrant of the town board. The amount of tax that could be levied in any one year, may be left as now fixed by our statutes, which give a discretion as to amount between one and seven mills on the dollar. The town board should be anthorized to purchase for the town all necessary machinery and material for the proper construction, improvement and repairs of the town roads.

The bill that has recently been introduced in the senate and assembly provides for these changes. This portion of the bill is the same, in substance, as the New Jersey law, adopted in 1891.

We believe that legislation, as here suggested, would meet the approval of intelligent men everywhere. There is but one opinion to-day as to the present system of working out road taxes. It is universally condemned. Nothing can be said in its defense. It is a relic of barbarism. The wonder is that we have endured it so long. The time is now ripe for a change. Before the present legislative season passes, we predict that in a number of the states this system, if such it may be called, will be abolished and we trust the legislature of Wisconsin, acting in the spirit of the message of his excellency, the governor, will record its condemnation of this expensive and extravagantly maintained institution of feudalism.

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FARMERS SHOULD NOT BEAR THE ENTIRE BURDEN.

But if our country highways are to be permanently improved still other legislation is needed. The town is too small a unit for this work. Nor should the burden fall upon the town alone. As stated above, all classes of citizens are interested in good roads, and the burden of keeping them in repair should not, in justice or equity, be placed upon any one class of society. It has been a prevalent notion that the public road belongs to the farmer and that it is his duty alone to construct and maintain it, and that he alone should be taxed for its permanent improvement. I wish to make it plain that I entertain no such views. Any legislation for the macadamizing or otherwise permanently improving the country roads, that seeks to place the entire burden upon the farmers is radically wrong and should meet with no favor before the legislature. The town, as such, will do its full duty by keeping at its own expense the roads within its boundaries in a fair state of repair, and by gradually improving, in a permanent way, the cross roads or roads less used by the public, leaving the permanent improvement of the main traveled roads to be provided for in other ways.

PERMANENT ROADS.

How then shall our main public highways be permanently improved? For if we are to make much progress in the line of "better roads" we must have something better and more permanent than the best constructed and best maintained dirt road, which at its best is the poorest of all roads for general public traffic and travel. We need a macadamized or telford road, or other stone or gravel road, that will at all seasons of the year be firm, smooth and convenient for travel, with all necessary and substantial ditches, drains, culverts and ditches, so constructed that with slight expense it will last for a century. It is plain that the expense of constructing such roads should not rest upon the town alone, which is another way of saying that it should not rest upon the farming class alone.

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NATIONAL AID.

Many of the leading advocates of better roads believe that the expense of their permanent improvement should be borne jointly by the nation, the state, the county and the town, each paying a certain per cent. of the total cost or each meeting the total cost of constructing and maintaining particular roads.

We take it there is nothing in the constitution of the United States which prohibits the general government from appropriating money for the construction of public highways. Henry Clay, in 1819, favored such a policy and at least one national road was constructed at the expense of the general government, extending from Cumberland, Md., through the states of Ohio, Indiana, Illinois to Jefferson, Mo. But times have changed. Then our present extensive railway system was not dreamed of. Transportation and travel, for any distance, are now and will be, probably, for all time, over the iron road. What we now need are not macadamzied roads of great length running parrallel with these modern means of transportation, but well constructed roads radiating from railroad stations, and extending into the country tributary to railroad lines. At any rate, this question of national aid can hardly be said to be a practicable one with us tonight. Such aid, if ever granted, will be a long time in the future.

SHOULD THE STATE GRANT AID?

The next question is whether the state, as such, can and should aid directly the improvement of the main traveled highways within the state. Those who have examined most thoroughly and written best on the subject of road improvement are almost unanimously in favor of state aid in some form. Upon principle, we see no good reason why some of the taxes collected in the form of license fees from our railway and sleeping car companies, express, telegraph and insurance companies should not be thus used. Nearly all of the road bills now pending before the legislatures of the different states provided for state aid. Some

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of them, like the Richardson bill of New York, authorize the construction of state roads, under the exclusive supervision of the state officials or employee, and provide that the total cost of such roads shall be paid out of the state treasury, and that such roads, when constructed, shall be kept in repair by the state, and shall remain under its exclusive jurisdiction and control. We feel that such is not the wisest form of state aid. There is very little reason why the state of Wisconsin to-day should construct macadamized roads of great length, entending for example from Milwaukee to Prairie du Chien in one direction, and from Janesville to Ashland in the other. Our railways make such highways unnecessary. We like much better such a law as that of New Jersey, enacted in 1891. This law makes the county a unit. The road is constructed by the county, under county supervision, except that the state appoints one supervisor of construction who is paid, however, by the county. Upon the completion of the work, and its approval by a state officer, the state pays out of the state treasury one-third of the total cost of the work. But the road, when completed, remains in all respects a county road, under the control and supervision of the county, to be maintained and kept in repair at the county's expense.

STATE AID UNCONSTITUTIONAL IN WISCONSIN.

It is regretted, perhaps, that under the constitution of Wisconsin no state aid can be granted for the construction or improvement of our public highways. Section 10 of article 8 of the constitution provides:

"The state shall never contract any debt for works of internal improvement, or be a party in carrying on such works."

This language of the constitution is clear and positive. There is no chance for interpretation. It plainly prohibits the state from in any way appropriating any funds out of the state treasury for constructing or maintaining the public highways. The supreme court of Michigan in construing a similar provision in the constitution of that state, in

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the case of Hubbard vs. Township Board of Springwells, 25 Mich., 182, uses this language.

"That a macadamized road is a 'work of internal improvement' is manifest. The shortness of the road does not change its character. The restriction is not against great works, but against all works of that kind, and the case comes within the language and intent of the prohibition."

It may be of interest to note in passing that a similar constitutional prohibition to that in Wisconsin and Michigan is found in the states of Minnesota, Kansas, Maryland, Alabama and Virginia, but in the constitution of no other state. In Tennessee the constitution expressly authorizes such improvements in the following language:

"A well regulated system of internal improvements is calculated to develop the resources of the state, and promote the happiness and prosperity of her citizens: therefore it should be encouraged by the general assembly."

SHOULD THE CONSTITUTION BE AMENDED?

We think our constitution might be amended so as to permit the state to grant such aid. The commissioners appointed by Governor Winans of Michigan two years ago to report to the present legislature of the state a plan of legislation for the improvement of the highways in that state, have recently filed their report, in which they unanimously recommend such an amendment to the constitution of that state.

COUNTY SYSTEM NOT AUTHORIZED IN MICHIGAN.

Such an amendment is necessary in Michigan before any proper system of road improvement can be carried out. Under the decisions of that state, the legislature cannot authorize or require counties to enter upon the improvement of roads within the county. The chairman of the Michigan commission in a recent letter to me stated: "The commission, without question, were unanimously in favor of the adoption of the county system for the making and maintaining of the main thoroughfares as a general rule,

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leaving the township system to be retained as to small lateral roads leading into these thoroughfares.

We apprehend that at the time of the adoption of our constitution, it was not intended that this provision should prohibit the legislature from granting state aid for the improvement of common public roads within the state.

There are two bills, now pending before the legislature, one in the Senate and one in the Assembly, which are in violation of this provision of our constitution, and for this reason, of course, cannot be enacted into a law.

COUNTY SYSTEM.

But we need not wait until our constitution is amended before adopting an intelligent plan for the permanent improvement of our public highways. Under the decisions of our supreme court, it is competent for the legislature to authorize and require such improvements to be made by the several counties of the state. This right and power are far more important than the right to grant state aid. Moreover, the permanent improvement of all the main traveled highways in any one of our counties is the work of at least from ten to fifteen years unless the county should bond itself and complete the work as rapidly as possible. If we commence the improvement at once, and at the same time take steps to amend the constitution, we shall have ample time left, after the amendment is adopted, to ask for each county much more state aid than we shall be apt to receive. After all, it is the county that must do, in any event, the great bulk of the work and meet the great bulk of the expense. The most that is needed from the state is some state supervision, and this need not cost the state but little, and would tend to bring unity and completeness to the work. But even this aid cannot be granted as the constitution now stands.

THE PROPOSED BILL.

We wish, therefore, to direct attention to the bill recently introduced in the senate by Senator Apple, and in the assembly by Assemblyman Fitzgerald, which provides for

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the permanent improvement of our main traveled highways in any county at the expense of the county. Much labor and care has been bestowed upon the preparation of this bill. The recent road legislation of the different states has been critically examined, and the bill has been drawn in conformity to our constitution and the decisions of our supreme court. Both the senator and assemblyman who introduced the bill are farmers and earnestly favor its adoption.

COUNTY ROAD COMMISSIONERS.

The bill provides for the appointment by the circuit judge, within sixty days after its passage and publication, of three commissioners for each county, to be known as county road commissioners, and to them is entrusted the details of the proposed work. They are to hold their office for a period of six years, subject however to be removed for cause at any time by the circuit judge. No more than two of the commissioners can be members of the same political party. Not more than one can, at any one time, be appointed from the same town, and not more than one can be a resident of any city or village in the county. That is, at least two of the commissioners must always come from the country districts. This gives the farming community the control of the commission, and this we think is just.

NEED OF COMMISSIONERS.

It may be asked, why place the carrying out of such an improvement in the hands of a commission? The answer is plain. The work to be done calls for experience and first class ability, for integrity and good judgment. The expense of the work will be greatly diminished and its quality greatly improved by placing it in the hands of a small body of men who, though holding office for a definite length of time, are selected without reference to the payment of any political debt or the creation of any political obligation, and would hold office, in all probability as long, and no longer, than they performed the duties of the office with ability

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and fidelity. This business of improving our highways has no politics in it, and the only interest of the tax payer is to get the most possible work done with the least expenditure of money consistent with thorough and permanent work.

HOW APPOINTED.

We invite particular attention to the method provided for the appointment of these commissioners. They are to be selected, and removed for cause, by the circuit judges of our state. It is hardly necessary for me to say that the selections would be made with great care and with excellent judgment. A circuit judge in performing this duty could have no other possible object than to faithfully discharge an important public trust. Many of the members of your society have attended as jurors before the different circuit courts in the state, and I run no risk in saying that you entertain the highest respect for the honor, integrity and good judgment of the judges of these courts, and that you feel that the commissioners selected by them would be the best men that could be obtained.

DUTY OF COMMISSIONERS TO INVESTIGATE.

The bill makes it the duty of the commissioners in each county to thoroughly examine into the condition of the public roads within the county, and to determine by what means of methods they can best be improved. They are to investigate as to what material, if any, there may be located within or near the county suitable for building macadam, telford, or other stone or gravel roads, and estimate the probable cost per mile of constructing such roads within the county. After having made this investigation they are required, on or before the first Tuesday of September, 1893, to make a report in writing to the judge of the circuit court, with such recommendations as they may wish to make.

TAXPAYERS TO BE HEARD.

It is then the duty of the circuit judge to publish notice of the time and place when he will hear any tax payer of the county on the question whether the public interests of

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the county demand and justify that it should enter upon the work of improving the main traveled roads in the county under the proposed law. At the hearing, it is made the duty of the district attorney to appear on behalf of the county.

Any citizen of the county is entitled to be heard, and after a full hearing, the judge of the circuit court is to judicially determine the question whether or not the public interests of the county demand that the improvement should be made. If he decides against the improvement in any county, that ends the work of the commission for that county. If he decides in favor of the improvement in any county, then it becomes the duty of the county board to provide the necessary funds for the work, the bill leaving, however, to that body a discretion as to the amount of money that should be raised.

JUDICIAL DETERMINATION.

Hence, before any work is compulsory under the proposed act, upon any county, there must be judicial determination by the judge of the circuit court of the county, after a full investigation, that the best interests of the county demand and justify that the proposed work be undertaken, This is a safe guard which ought to protect any county from injustice, or unwise expenditure of money.

PARTICULAR ROAD TO BE IMPROVED.

The bill also provides that before any contract is let for the improvement of any road under the act, it shall be the duty of the commissioners to report to the circuit judge as to the road they intend to improve; whereupon the circuit judge shall fix the time and place that he will hear any citizen of the county on the question whether the best interest of the county will be subserved by improving the road proposed or some other main traveled road of the county. If the circuit judge decides that the interests of the county would not be best subserved by improvement the road selected by the commissioners, it then becomes

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their duty to select some other road for improvement. Under this provision it would be impossible to favor one part of the county at the expense of the other.

TAX TO BE EXPENDED IN THE COUNTRY.

The roads that may be improved under the proposed act become county roads subject to the jurisdiction and control of the county, and thereafter to be maintained at the expense of the county. The burden of constructing and keeping such roads in repair is placed upon all the taxable property of the county. The bill as originally drawn expressly provides that no part of the money raised under the act should be expended in constructing, improving, or maintaining any roads "located within the corporate limits of any incorporated city or village" in the county. It was feared by some of those who drafted the bill that such a provision, though found in the road laws of some other states, might be declared unconstitutional by our courts. Hence it was stricken out. But the same result has been accomplished by so framing the bill that two out of three commissioners must come from the farming classes, and by providing further that no road, street or section thereof located within the limits of any incorporated city or village in the county should be constructed, improved or kept in repair under the act, except on a unanimous vote of the commissioners. This provision is not inimicable to the constitution. It will be just as effectual as the other, for it is hardly necessary for me to suggest that a commission, made up of a majority of farmers, will be rather slow in voting unanimously to expend money raised by taxation upon the property of the county, in macadamizing streets within the limits of the cities. An illustration will make plain the importance of this provision to the farmers. The equalized valuation in Dane county, as established by our board of supervisors, is now, in round numbers, $24,000,000. Of this amount 36.83 per cent. is in the incorporated cities and villages, and one-fourth or twenty-five per cent., is in the city of Madison alone. So that for every one hundred dollars raised by general taxation upon the property of Dane

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county, $36.83 would come from the cities and villages, the most of this latter sum coming from the city of Madison alone.

IS IT JUST TO TAX THE CITIES ?

But is it just to tax the citizens of Madison to build macadamized roads out into the adjoining country, and so frame the law that none of the money raised will be expended in improving the roads and streets within the city ? We unhesitatingly answer yes. Every city or village within the county is deeply interested in having macadamized roads leading to and from it. Its growth and prosperity depends very materially upon such roads. There is scarcely a business in the city that would not be directly benefited by such roads. I am sure that I speak the sentiment of five-sixths of the citizens of Madison, when I say that they are willing to pay the whole expense, as they have of late been doing, of macadamizing the streets in front of their lots, and at the same time pay their share of the county tax to be used wholly outside the city in building good roads throughout the county. This legislature will be asked, if I am rightly informed, to so amend the general city charter as to authorize cities to raise by taxation funds to be expended outside the limits of a city in constructing county roads. Such an expenditure is a good business investment for any city.

"Enterprising merchants," says Mr. Studebaker, "in many places have been so fully alive to their interests as to secure the building of country roads, at the expense of their respective towns, often for several miles into portions of agricultural districts, from which, under the influence of good roads, they might naturally expect a large demand for their goods. Every town, indeed, is largely dependent for its prosperity upon the trade which it derives from the surrounding country, especially if is not a manufacturing town, and there can be no doubt that it would be money well expended for towns to aid liberally in building even country roads which would serve as feeders to these centers of population." "The small interior town of Rock

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Hill, in South Carolina," says Albert A. Pope, in a recent article in The Forum, "has found it profitable to macadamize its main roads for ten miles in all directions as an inducement to the farmers to draw their cotton and other produce to that town to exchange for supplies."

One of the commissioners of an Ohio county which has constructed a system of macadamized roads under a law somewhat similar to the proposed bill, spoke, in a recent letter to me, of the value to the county seat of his county of good roads, as follows: "During one day in January last year, when the weather had been a little open and soft for some days, I had occasion to go over to the county seat of the adjoining county of Wyandotte, Upper Sandusky. I found the entire town and surrounding country stuck in the mud. Not half a dozen teams to be seen on the streets during the day; business of every description at a standstill, and business men said to me that this was a fair sample of what they had experienced for more than two weeks, and they rightly and clearly attributed it to the want of improved roads. Upon my return home in the evening I found it had been a busy day in Kenton (the county seat of his county) and a great many farmers had been to town. One of our police officers had taken the trouble to count the conveyances at two o'clock hitched in and around the business part of the town. They numbered over six hundred. This demonstrated pretty clearly that pikes will tell." The same writer speaking of the value of such an improvement to the farmer says: "Only consider that it enables the farmer to go to market any and every day in the year with all that his wagon will carry. Once, thirty bushels of wheat would make an over-load for the team during half of the year; now eighty to one hundred bushels can be hauled with ease at any time."

TWO METHODS OF RAISING FUNDS.

The proposed bill provides two methods for raising funds for carrying on the improvement, one by borrowing money on the credit of the county and issuing bonds therefor, the other by an annual tax of not less than one or more than

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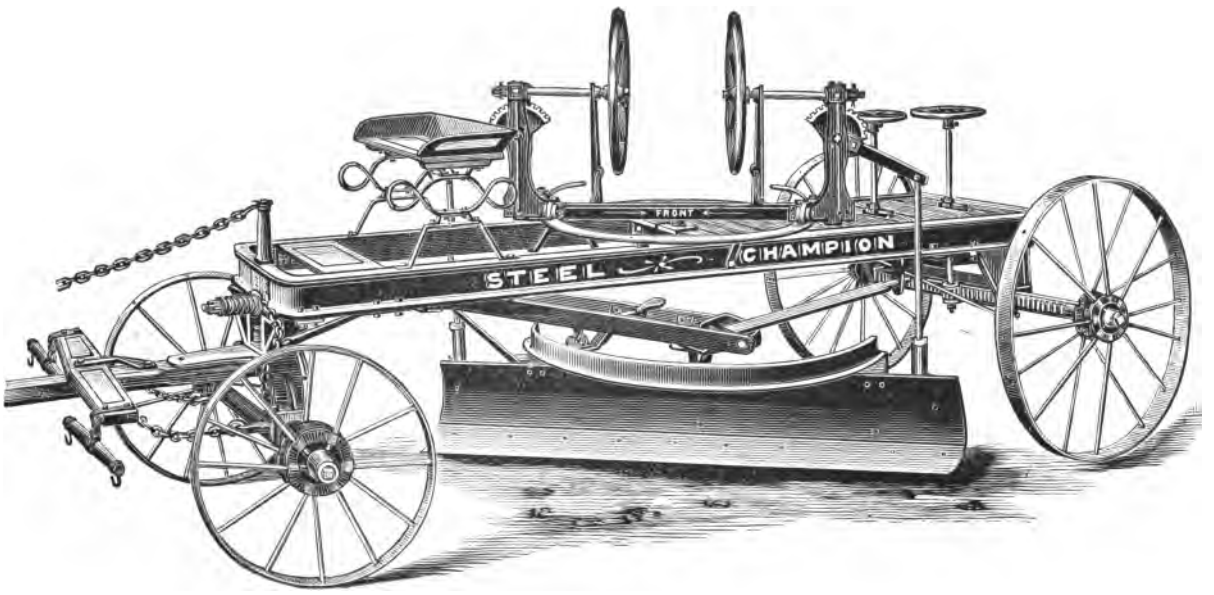

Improved Road Machine.

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three mills on the dollar. It is left with the county board to determine which method shall be adopted.

BONDING THE COUNTY.

There are arguments for and against bonding the county for such an improvement. Hence it should be left with each county to decide that question itself.

DECREASE IN MUNICIPAL IMDEBTEDNESS.

Some of the arguments in favor of bonding the county are that the building of a system of macadamized roads is a permanent and expensive improvement, the whole burden of which should not be born by the present generation. If rightly constructed, such roads, with slight repairs, should last for centuries. Our state is out of debt; so are most of our towns and counties. As a nation we have been rapidly reducing, not only our national debt, but all forms of municipal indebtedness. At the present rate of decrease, in fifteen years, almost all state, municipal and county indebedness will be paid, and to-day the total indebtedness of the different states of the union is less by $50,000,000 than the available funds and assets held in the several state treasuries.

BONDING THE COUNTY AS A BUSINESS INVESTMENT.

Under such circumstances, the main question is whether, from a business standpoint, it would be a good business venture for a county to bond itself to macadamize its main roads. I can best answer this question by a few figures concerning Dane county. The equalized valuation of Dane county is now, in round numbers, $24,000,000; its assessed valuation is quite a little more than this. In 1892 the towns of the county levied a tax for road and bridge purposes of a few dollars less than $68,000. Suppose the towns pay their road tax in money, as proposed in this bill, but should levy not more than one-half the amount, that is, $34,000. Suppose further that Dane county should bond itself for $500,000 with which to build macadamized roads.

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These bonds, under the constitution, could run for not more than twenty years, but they would not have to be issued any faster than the money was needed to pay for the work done. This amount of money would build, in Dane connty, at least one hundred and twenty miles of excellent macadamized or telford roads. It would take, say five years, to do the work. Hence, the payment of the bonds could be made to extend over a period of at least twenty-five years. They could be so drawn, without injuring their market value, as to permit the county to pay one-twenty-fifth of their number, or amount, each year, the bonds thus to be paid to be drawn by lot. Such bonds could be readily floated at not to exceed four per cent. The interest on the full amount of $500,000 for each year would be $20,000, and one twenty fifth of the principal would be $20,000, making principal and interest $40,000; but the interest would be growing less each year, until at the end of twelve and one half years it would be only $10,000. Now a tax of only two mills on the dollar, on the taxable property of Dane county, would yield at the present time about $50,000, and the county is rapidly increasing in wealth. This amount of money would, from the start, pay the interest, and the principal on the bonds as they fall due, and leave $10,000 for the repairing of roads constructed, and this sum would each year increase until at the end of twelve and one-half years it would be $20,000. This could all be done, without increasing one cent the rate of taxation as now levied in the different towns for road purposes, and the towns would be expending in cash $34,000 each year. Within five years we would have one hundred and twenty miles of smooth, firm, even roads, over which a heavy load could be drawn with ease at all seasons of the year. But this is not all. Such a system of roads would add immensely to the value of all property within the county, to say nothing about the comfort, social benefit and enjoyment that would come from such an improvement, and the saving to the farming community of the great loss which it now sustains each year by reason of the present wretched condition of our country roads. A conservative

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estimate of this loss in the state of Illinois alone is for one year, $16,000,000, and for all of the states is $300,000,000 per year.

The entire cost of the improvement could be made without in the least increasing the rate of taxation in the county. This has been the experience, wherever such improvements have been made. Take for example Union county, N. J., where within the last two or three years the people of that county expended $255.000 in macadamizing roads and bonded the county for that purpose for $300,000. Speaking of the cost and value of this improvement Mr. Chas. McCabe, a man thoroughly acquainted with the facts, writes as follows:

EXPERIENCE OF NEW JERSEY.

"Notwithstanding the fact that $300,000 worth of county bonds have been issued to build these roads, and the interest must be met annually, the tax rate has not been increased in the county or in any city in the county, in consequence of the extra interest expense; and it is but fair to say that the actual appreciation of property due to the increased values of lands benefitted by the improved roads meets the increased taxes already. And none of our rods have been completed for more than a year, while some parts of them only within the present month.

As an advertising medium alone they have been worth what they cost, for they have brought county property into enviable prominence, have brought new wealth and new enterprise in the midst of us, have given direct impetus to building improvements in every city and town touched by them, and as yet the benefits are only begining to be realized. It is safe to say that the citizens and tax payers of Union county would not go permanently back to the old system with its old roads if they were paid many times the cost of the new roads." And again: "Our country roads (thus improved), have not only been a convenience to travel and a financial success; they have been a source of pleasant education to many. It is a fact that these main lines, now

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daily alive with travel, were formerly used only upon necessity."

MAY RAISE THE MONEY BY ANNUAL TAX.

But this bill, as stated above, leaves it optional with each county to adopt or reject the method of raising money by issueing bonds. If, however, any county, in which the circuit court judge has determined that the public interests of the county demand that special action be taken under the act to improve the roads of the county, should not choose to issue bonds for that purpose, then it becomes the duty of the board of supervisors of such county to provide funds for the purpose by levy of an annual tax of not less than one nor more than three mills on the dollar. A tax of one mill, in Dane county, would yield about $25,000, and of three mills, about $75,000, per year. With the smaller amount there could be constructed about six miles of good macadamized road, and with the larger amount from eighteen to twenty miles of such road.

ASSESSMENTS FOR SPECIAL BENEFITS.

Twenty per cent. of the entire cost of improving and constructing any road, under the proposed act, is to be assessed against the land within the boundaries of the road improved, and the act provides that the boundaries of the road shall be taken to include any land that lies within one mile on either side of such road. Each parcel is to be assessed in proportion, as near as may be, to the peculiar benefit deemed to have been conferred by the improvement, but in no case in excess of such benefits, The road limit, as fixed by the bill, would give 1,280 acres of land for assessment for each mile of the road. If the road should cost even $5,000 per mile, twenty per cent., or one fifth of this, would be $1,000 to be levied upon 1,280 acres, or seventy-eight cents per acre. Of course, some of the land nearest the road and most benefitted will be assessed a larger sum, but in no event could such an assessment be very high. The party assessed, is given a right to be heard as to the amount assessed, and the right of appeal is provided for.

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TEN YEARS TO PAY IN.

To make the payment of such assessment as easy as possible, the bill provides that the party may, if he does not wish to pay at the time the assessment is made, pay it in ten equal annual installments, with interest at the low rate of five per cent., and at any time during the ten year period, he may, if he choose, pay up the whole amount of the assessment then remaining unpaid. Substantially this system has been in operation in the city of Madison now for a number of years, and under it the streets of our city are being rapidly macadamized, the whole expense, however, of the improvement being paid by the adjoining lot owners. Certainly under such a system as this, no farmer would feel it burdensome to meet his assessment.

FARMERS CAN WORK OUT ASSESSMENTS.

Moreover, each farmer who chooses to do so, would have an opportunity to more than pay for his assessment in work along the line of improvement. From the very nature of things the necessary team work, such as grading the road the and drawing of stone and other material could be done by farmers along the road cheaper, and at greater profit to them, than by any other class of persons.

EXPERIENCE IN OHIO.

Again I wish to quote from the letter of the Ohio commissioner, who has had experience as such commissioner for some twenty-five years.

"The plan," say she, "adopted by the county commissioners at first was to pay one-half (of the cost of the improvement) out of the general levy, and one-half by special levy on the line of the road. The petitions for roads, however, came in so fast that construction could not keep pace, and the proportion of payment was changed from one-half out of the general fund, to one-third, and two thirds from the special levies on the line of the road. This seemed to be satisfactory to all parties as a fair proportion, it being conceded by all that as the general public use of all the roads

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they should pay some part of the cost, and as the parties living immediately upon the line of the road are especially benefited, they should pay an additional part of the cost. Thus dividing the burden, it has been light upon all, and has really been paid without being any burden, as, in fact, the work of construction has been performed by the persons living upon the roads, and they have every year earned enough from this source, as a rule, to pay not only their pike tax, (pike road there is the same as macadamized road here) but all other taxes, and so long as bonds were being sold it increased the volume of currency in circulation per capita and helped many a poor man out of a hole."

OPPOSITION REMOVED.

And yet in this same county, when the work was first commenced. "a mighty howl," says the same commissioner, "and a thundering protest came up from the sturdy farmers, north, east, south and west, against this proposed shameful waste of the people's money. Meetings were held all over the county, and one grand mass meeting was called at Kenton, the county seat, to organize against this outrage to raise money to enjoin and otherwise fight. Threats were even made of violence upon the parties who were prominent in favor of turn pikes." But after the first few miles of road were constructed, and the people had had an ocular demonstration of what these roads were accomplishing for the county, the difficulty was solved, and the commissioners were unable to construct the roads as rapidly as the people demanded. In this same letter, the commissioner says: "I think there are petitions now on file in the auditor's office for over forty miles of pike, nearly all by-roads, (and it must be remembered that the petioners there pay two-thirds of the entire cost of constructing the roads) and I do not think the man can be found in the county, that is not heartily in favor of turn-pike, and they will tell you, if questioned, that they always were. We have good roads all over the county, and our people have almost forgotten how they were practically confined to their homes from three to six months every year, by the mud roads."

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TOWN SHOULD NOT BE SPECIALLY ASSESSED.

The statutes of some of the states provide that the town, through which a macadamized road extends, should, in addition to paying its share of the general county tax, pay, as a town, a particular portion of the cost of the improvement as a special benefit. There is no particular equity or justice in such a provision. The person living in one corner of a town should not be called upon to pay, in addition to his share of the general county tax, an additional tax for constructing a road across the opposite corner of the town. Persons living in other towns might be much nearer to the road improved, and would be much more benefited by the improvement. The plan of assessing the owners of land lying within a certain district on either side of the road, as provided for in the proposed bill, for special benefits, is much more satisfactory and just. It commends itself to the fairness of all right thinking tax payers.

WIDTH OF WAGON TIRES.

There should also be enacted a law regulating the width of tires to be used on lumber wagons. Such a law has recently been passed in Ohio and Michigan, made compulsory in Ohio, but in Michigan the owner of such a wide-tired wagon is exempt from a certain portion of his road tax. Such a law might exempt such wagons from taxation, and should, after a certain time fixed in the law, make it an offense for any person to use upon any macadamized road in the county a wagon loaded above a certain weight with tires less than the prescribed width.

CONVICT LABOR.

It will be observed that this proposed act does not provide for the employment of convict labor in the construction of these roads. The idea is quite prevalent that such labor should be so employed. We think, however, such employment would be unwise both from an economical and moral stand-point. The reasoning of the commissioners

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of Michigan, in their recent report to the governor on this subject, cannot very well be answered:

REPORT OF THE COMMISSIONERS FOR MICHIGAN.

"Convict labor," say the commissioners, "has been employed upon the highways in monarchial countries, and perhaps when thus employed has been productive of good results. The principal employment has been in the breaking of stone, but with the improved machinery now in use for that purpose there would be no economy. In Michigan convicts sentenced for life would have their opportunities for escape greatly increased, and knowing that no additional punishment could be inflicted upon them, would not hesitate to avail themselves of the opportunities however closely guarded. If worked with a ball and chain the demoralizing spectacle would be abhorrent to every citizen. Necessarily their labors, and the effect upon the common mind would be to make labor appear to be degrading. Labor thus employed would be associated with crime and criminals. We think, in this country, under our institutions, all labor is honorable, and there should be nothing done, under the sanction of the law, which might have a tendency to make it appear otherwise. If the ball and chain were not adopted, the rifle would be in constant use to prevent escape, and the lives of the guards would be in constant danger unless the guards were in such force as to prevent being overpowered. Then these convicts must be housed and guarded at night as well as by day during rainy weather when work could not be done upon the highways, and we believe the expense of all these preparations and precautions would exceed the value of the labor performed. In monarchial countries, where rulers claim divine right, it is thought wise for the government to give exhibitions of its power to its subjects, and such exhibition would be given by the employment of convicts guarded by soldiers and before the eyes of the public continuously. A government like ours, based upon the will of the people, would not strengthen itself in the love and respect of the people by any such exhibition. A system of work-

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ing convicts upon the highways would promise better results in the southern states, where the climate is less rigorous, and where the expense of keeping convicts, when not at actual labor would be much less than here, and yet, so far as we can learn, all the states in the south where this has been tried, have either abandoned it entirely or leave it to those convicted of petty offenses, tramps and vagrants who would have less motive to escape than convicted felons.

All public exhibitions of brutality tend to make the people brutal. This is a principal so well established by the experience of the past as to require only illustration. Executions for capital offenses are no longer public; whippings at the post have been abolished, and the placing of prisoners or convicts in stocks, would justly now be considered an act of barbarism. The brute force necessary to keep these convicts at labor and to prevent their escape we think would be in its influence demoralizing the people."

PROPOSED LAW DEMOCRATIC.

Is the proposed law un-democratic, as being an unwarrantable interference with the "local" management, so-called, of our public highways? We have heard such an objection made by but a single individual thus far. He was not a democrat, however. But in what respects is the bill un democratic? True it requires the county board, under certain circumstances, to levy a certain tax for the improvement of highways within the county. But is there anything un-democratic in this?

To show how easy it is for people to be illogical, the very person who may object to this bill as un-democratic, is as likely as not in favor of building these county roads in part by taxation upon the state. Such a person may see nothing un-democratic in taxing Grant county to help build roads in Ashland or Douglas county. If it is un-democratic to compel the county board to raise taxes to build highways within the county, is it not un-democratic to compel them, as we now do, to levy a tax of one mill on the dollar to help educate children that live in other coun-

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ties? It may be supposed that the county should be left free to decide for itself when it would levy a tax to build a county jail, and yet, under a law passed by a democratic legislature two years ago, the state board of control condemned the jail of Dane county, and served notice on its county board that if it did not proceed to levy a tax and build a suitable place for its criminals, they would be transferred to some jail outside of the county and there kept at the county's expense. The law was perfectly just and thoroughly democratic, and without such a law, strange as it may seem, no one can tell how long the county board of Dane county, the second wealthiest county in the state, would have delayed building a suitable jail, notwithstanding a county tax of two mills on the dollar would raise the necessary funds. The provisions of this bill requiring the county, under certain circumstances, to raise funds for constructing county roads is nothing new. The legislature of Wisconsin has enacted numerous laws appointing directly commissioners to lay out state and county roads, and compelled the counties through which they ran to pay the expense of laying them out and the towns the expense of constructing them, and such laws have always been sustained. We must not forget that towns and counties are the mere creatures of the state, agents appointed to execute certain powers of government, and that the legislature, at any time, can add to or take from the powers of these quasi corporations as the best interests of the people may require.

PUBLIC HIGHWAY BELONGS TO THE PEOPLE.

The common notion that the public highway belongs to the particular town or road district in which it is located is exceedingly erroneous. It belongs to the public. Every citizen is interested in it. Its condition concerns the whole county at least. At the last term of the circuit court for Dane county, the cost to the county for the trial of three suits against three different towns in the county for damages for accident on defective roads, was not less than $1,200. Our existing laws recognize this fact, for when a

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town cannot bear the whole expense of constructing a bridge within it, the law compels the county to meet one-half the expense by a general county tax. The statutes also provide for the laying out and constructing of county roads at the expense of the county.

LOCAL MANAGEMENT CONDEMNED.

Speaking of this absurd theory of "local" management of our highways, an able writer on the subject recently used this very pointed and truthful language: "Let us forever absolve ourselves from the ridiculous arguments which favor 'local management' of the country roads. It has been tried everywhere and has never succeeded anywhere. Indeed, if results count for any thing, there is no such thing as local management. We have had local mismanagement for about a century, and European countries had it for centuries before us. The slavery of custom has given many of us the hide-bound conviction that the roads in each particular locality are, by right, the special care and property of the people who happen to live in the immediate neighborhood. Let us forever understand that this idea is widely astray. It is the creature of custom—a custom born of convenience." The proper care, repair and maintenance of our public highways are matters of concern to the entire state, and therefore are proper subjects of legislation in which the representatives of all the people may take part. Because the legislature has heretofore delegated to town officials, or county officials, certain artificial powers of local management of these highways, and permitted them to indulge in a kind of periodical and perfunctory ploughing up the mud adjacent to their own doorways, it does not follow that the legislature has lost the sovereign right to adopt some other and more rational system of management and maintenance of these highways.

THE COMMISSIONERS HANDLE NO MONEYS.

It will be observed that this bill is so drawn that not a dollar of the money expended passes through the hands of

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the commissioners. It is to be all paid out of the county treasurer directly to the persons entitled to it for work performed.

SHOULD THE COUNTY BOARD APPOINT THE COMMISSIONERS.

This bill leaves everything to the county board of supervisors that could be left with that body under any county system for the permanent improvement of our county roads, with two exceptions. These are the appointment of the commissioners and the determination of the question whether the public interests of the county demand that the improvement should be made in any particular county. These two powers are conferred upon the circuit judge. The legislature could, if it saw fit, exercise these powers directly; or it can confer them upon the county board or circuit judge. Which one of these agencies, the circuit judge or the county board, would, in all probability exercise these two powers for the best interests of the tax payers of the county? Suppose one of you should be required to pay by special assessment a tax, under this act, of $100 for the improvement of roads in your county, which one of these two agencies would you prefer to select the commissioners and direct how these taxes to be paid by you should be expended? There is but one answer to this question. After all, it is the interest of the tax payer that should be first considered in this matter. In any event, the work contemplated by the act must be performed if at all, by commissioners, and the only question is whether their selection by the county board or by the circuit judge would give us the more competent men. My own opinion is that if the selection of the commissioners and the determination of the question whether the county shall enter upon the improvement of its roads are left to the county board the act will be of very little, if any, value. Under such a law the opportunity for inefficiency, and jobbery and political influence would be immeasurably increased. Let us remember that this improvement of our common highways is a business enterprise, pure and simple. The tax payers are to foot the bill. The only thing they will

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ask and insist upon is thorough work, economy and efficiency. Broadly considered, they will favor that system which secures the best men for the work, and leaves such men in a position where the only interest they will have is to serve the tax payers of the county.

REASONS AGAINST IT.

I would not say anything against the members of our county boards. Many of these men are men of ability, and all of them are, as a rule, honest. They are also exceedingly economical. But the body is a large and unwieldly one, and more or less political in its character. From the very nature of its makeup, it is exceedingly slow in levying any tax for any public purpose. The refusal to build a jail for Dane county is a fine illustration of this disposition of the board. But it may be said that unless the county board should choose to order a tax for road improvement, no tax should be levied. I do not think that this follows. How many of our county boards would levy the one mill school tax to help educate children in other counties, if they were not compelled to do so? It is for the state, as a whole, to legislate on such matters. It is only in this way that any progress is possible to the people of the state. The members of our legislature are here to represent their constituents; and yet, how many of the appropriation bills now before that body, in aid of the university, to build a library building, etc., all worthy measures, would be adopted if submitted to a popular vote? You know that every one of them would meet with sure defeat.

THE DANGER.

The danger to be feared just now is unwise legislation on this subject of road improvement. There is danger that the bill passed will be unconstitutional, or so indefinite in its provisions as to lead to endless litigation. Such a bill would create great dissatisfaction, and would sooner or later be repealed. It would be far better for the legislature of Wisconsin to kill a good bill than to pass a poor one, or any half-way measure. We can better afford to get along

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a few years more with our wretched roads, great as the financial loss is to the whole state each year, than to make a radical mistake at the commencement of this work.

LENGTH OF BILL.

The proposed bill is lengthy. This is necessarily so. Such a law should be free from obscurity. It should provide with clearness and definiteness the way for its execution. The bill has been framed with a view of preventing all unnecessary litigation under it. The right of all parties are carefully guarded and protected, and the method of securing these rights clearly prescribed.

THE PROBLEM.

But do the people know how to build good roads? Will it not take a number of years of investigation and preparation before good roads can be wisely constructed in this state? We think not. The problem to be solved is not so much the finding out how to construct a good stone or gravel road as to provide the means for doing the work under a law that is just to all parties and as easy as possible of execution. Good stone roads have been constructed for twenty-four centuries, and many of them constructed at that early date are in as good condition today as when first built. We have back of us, on this question the experience of all the centuries. France, England, Germany, Italy and other European nations have built magnificent systems of permanently constructed roads. In a small way, such roads have been and are being constructed in many places in this country. The method of constructing such roads has been published again and again, and is of easy access to any one of ordinary intelligence who wishes to investigate the subject.

SUPERVISING ENGINEER.

It must be remembered that all the work to be done under the proposed act is to be done under the supervision and control of a competent civil engineer. If he has not already experience in building such roads, it would take

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him no great amount of time to thoroughly prepare himself for such work.

Moreover, by the terms of this bill, no work in any event can be done under it until the spring of 1894. There will be a full year for investigation and inquiry. The World's Fair is to be held near our borders. The road department there will furnish a fine opportunity for the many people from this state that will visit the fair to witness what has been done thus far in constructing good roads. The commissioners appointed under this act would, many of them, undoubtedly avail themselves of this opportunity. Our farmers' institutes can, and will, discuss this matter throughout the state. The press of the state is already aroused on this subject. For these reasons we respectfully submit that there is no cause for longer delaying action on this important subject of better country roads for the people of Wisconsin.

The President: The discussion will be continued briefly by the Hon. J. M. Smith, of Mineral Point, a respected and honorable member of the present legislature.

ADDRESS BY HON. J. MONTGOMERY SMITH.

Member of the Assembly for Iowa County.

At the close of Mr. Olin's address, the Hon. J. Montgomery Smith, member of the assembly from Iowa county, delivered a very able address on the subject of "Better roads for the people of Wisconsin."

This subject of the improvement of our common highways, said Mr. Smith, seems to have suddenly supplanted the tariff, silver and other great questions of the day, in the minds of the American people. Nearly every governor of the different states, in his annual message, has called the attention of the legislature to the necessity of obtaining better roads and in forcible and eloquent language has described the importance of good roads to the settlement of a country, by the enhancement of the value of its lands, by promoting the varied industrial interests

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which require transportation facilities and by the advancement of schools and churches, and by adding to the general convenience and social intercourse of the people.

THE PEOPLE AROUSED.

That good roads are beneficial, no one doubts; that better ones are needed even in this state is admitted by all. For over a year past our newspapers have been teeming with well written articles showing the advantages of good roads. Able and eloquent gentlenmen, in attendance upon our farmers' institute in all parts of the state have told us how our road money is being wasted. Pamphlets have been written and magazines started in which learned men of the country have tried to settle the question as to just how our roads should be improved and what definite and practical plan may be formulated to accomplish the great work.

THE SAVING OF GOOD ROADS.

Better roads will cheapen transportation by allowing the farmer to dispose of about one half the horses he now keeps for his work. Careful estimates show that one horse can draw three times the load on a good macadam road that he can on a dirt road. Good roads will enhance the value of every acre of land in their vicinity by bringing the owner into closer and more profitable communications with the towns and cities.

THE MILITARY ROAD.

In the primitive days of our territorial infancy and for many years after we had put on the full dress of statehood, but prior to the time when we were cut up by railroads, this state had the benefit and good example of at least one good main highway extending across the state from Ft. Howard on Green Bay to Ft. Crawford on the Mississippi, which was located by the war department for the purpose of moving troops and supplies. It was known as the military road and kept on the divide between the waters flowing north into the Fox and Wisconsin rivers and those

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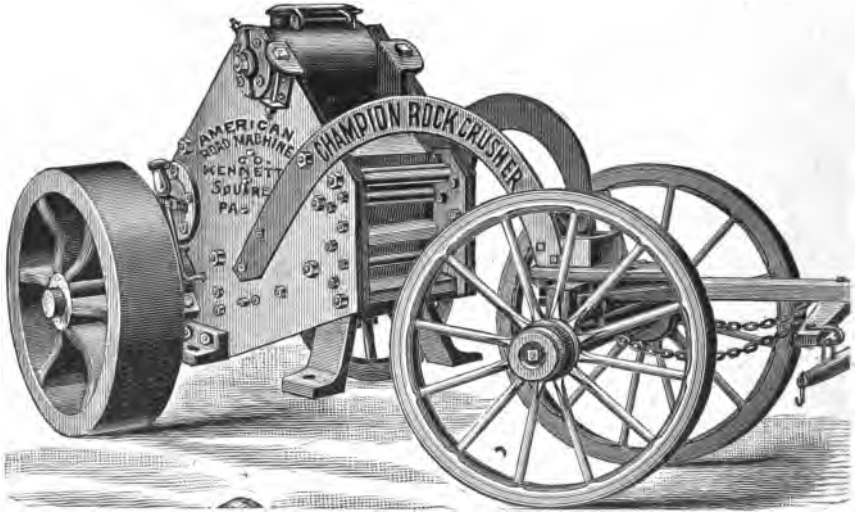

Improved Stone Crusher.

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flowing south into the Illinois and other rivers. It was almost level, having excellent drainage, even in the worst seasons of the year. It was a good road, familiar to the early settlers, and every one wishing to cross the state invariably made a bee-line for the military road and traveled on it as far as possible, often going miles out of his way to reach it. But as our country was settled up and the land was fenced, the highways were thrown upon the section lines, so as to preserve the compactness of farms, with as little fencing as possible, regardless of the topography of the country and its adaption for roads. As a consequence, the military road is only a tradition, brought to the mind of the old settler as he glides along one of our railroads by the sight of an old building in ruins, once a flourishing wayside inn on the military road.

ADVANTAGE OF WISCONSIN.

Probably no state in the Union, possesses the natural advantages for making good roads that Wisconsin does. With its rolling prairies and sloping hills the drainage is unsurpassed. Add to this our boundless forests of every variety of timber and inexhaustible quarries of stone, from the cast iron granite down to the crumbling sand stone, not to mention the wave-beaten beds of gravel bordering on our great lakes, and the railroad facilities for cheaply transporting and distributing these good road materials throughout the state. Compared with most other states the natural and acquired advantages of Wisconsin for permanent road improvement are unsurpassed by any other state in the Union.

PRESENT SYSTEM MUST BE CHANGED.

But to avail ourselves of natural advantages, and to succeed in this grand undertaking we must adopt some system commensurate with this great work. At least four-fifths of the money raised annually in the state by taxation for highways is wasted and fretted away under our present system of collecting the money and working upon highways. Much good may be done by changing the laws and

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adopting a different method of spending the money. But we must build on a foundation that covers the whole state. Our highways are too numerous, and many of them must be abandoned. Our citizens must give up the idea that whenever they buy forty acres of land they are entitled to a four rod highway all around it, and a right of way at least twenty feet wide across the adjoining land. New highways must be laid out on suitable ground by competent engineers and thereafter constructed, worked and maintained by experienced road superintendents.

NEEDLESS WASTE.

I have seen it said that good macadam roads can be built at a cost from three to seven thousand dollars per mile, depending upon the topography of the country and the facilities for obtaining good road material. It is safe to say that in my own county of Iowa, in the last fifty years, nearly, if not quite, one million dollars have been expended on highways, enough to have built about two hundred miles of macadam road, which if judiciously placed in the really bad places in the county would give us good roads throughout the county.

CONVICT LABOR.

If the state should take hold of this matter, the convict labor of the state could be employed without raising the question of competing with skilled labor, a question which for years has been a prolific source of trouble in this country. It seems reasonable that the able-bodied convicts of this state should, in some manner, be compelled to produce as well as consume the wealth of the state, provided it can be done without going into competition with and breaking down the wages of the skilled artisan. And in what better manner can the convict labor be employed, than in building proper and better roads for these convicts to travel on when their terms of servitude are over.

THE ALL IMPORTANT QUESTION.

Good roads is one of the great pressing needs of this country. Beside it, all other questions dwarf into insigni-

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ficance. The whole country is ablaze with enthusiasm over the problem. Let us hope that our law-makers now in session may evolve some system, or plan, for laying out, building, and maintaining highways over which even a Clydesdale, Norman or Percheron may make a mile in 2—40.

DISCUSSION.

Mr. A. O. Fox—*Mr. President and Fellow Citizens:* It affords me very much pleasure to introduce these resolutions:

WHEREAS, The tax upon the productive energies of the farmers of Wisconsin by poor roads is greater than all the taxes of Dane county and state; and

WHEREAS, The present system of collecting and expending highway taxes has brought little, if any, improvement to country roads in thirty years; and

WHEREAS, Good country roads mean higher values for farm property and greater comfort in farm life; therefore,

Resolved, That the laws relating to the assessment and collection of highway taxes should be repealed, and a law enacted providing for the payment of road taxes in money and the expenditure of funds so raised by competent and non partisan authority.

Resolved, That we are in favor of the passage of bill No. 70, S., introduced by Senator Apple, because it provides a convenient, comprehensive and rational system of highway management and improvement, in which city and country shall bear joint and equalized burdens; because it makes improvement obligatory; cares for the interests of property holders by well defined proceedings, and contemplates and provides for a system of roads passable at all seasons of the year, with little if any increase to our rate of taxation.

The President—The preamble and resolution is before the convention. What is the pleasure of the convention?

A vote having been taken:

The President—The resolution is passed almost unanimously. The convention will now stand adjourned until tomorrow morning at 9 o'clock in the agricultural rooms.

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THURSDAY, February 9th, 1893, 9:30 A. M.

The President—The first paper this morning will be that of Mr. Fisher, of Janesville, upon "The Typical Draft Horse."

THE TYPICAL DRAFT HORSE.

By A. L. FISHER of Janesville.

The typical draft horse is the horse that yieldeth the most pleasure to his possessor; hence to describe him, we must keep comfort and profit before us as the chief end in view. We certainly must consider also what points and qualifications he must possess. Symmetry, weight, color strength, durability and action, as well as disposition, are the points that shall first claim our attention.

In size he must weigh from 1600 to 1800 pounds in ordinary working condition, no undersized horse, no matter how perfect otherwise can be a first class draft animal, because he is at all times called upon to give the utmost power he has within himself, which destroys man's comfort and shortens the life of both man and horse; for no man, animal or machine can be at a continual strain or pressure and be durable, nor is an oversized horse where weight is composed of flesh a typical draft horse. His weight must be a perfect development of bone, sinew, muscle and flesh from the colt to the matured horse; and these must be so proportioned as to give the horse perfection in symmetry; his head and neck should not be one fourth of his whole weight, neither should his bones be all round or all flat, neither is it necessary that his muscle should predominate in his fore parts, but that they should be so distributed and proportioned as to give action and strength. To be still more specific he must be an easy keeper, level headed, in the fullest meaning of that word as applied to horses, his legs must be perfect both as to form and health, no curbs, no spavins, no splints; no wind galls, free from thorough pins in either the knee or hock joints, not flat footed, neither mule footed, but must stand square and straight on his legs, not long but short between the joints of the legs.

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Also he must not be too upright on his pastern, and neither should he recline enough to weaken his power. His loin must be perfect as Job said of the behemoth, "therein lay his strength;" his stifle power must be immense. his legs must be squarely under him and in good shape in order that he perform his duties as a draft horse properly and add to the comfort and profit of his master. No sleepy, dull nor small dark eye is wanted, in short, his symmetry must be stylish, grand and imposing, commanding the attention of the beholder, so as to charm, as it were, him who would purchase, or the horse fancier, whatever may be his desire. The typical draft horse should have combined in his make-up, the qualities of speed that makes him a fast walker which is a very important consideration, before the plow, the mowing machine and the loaded wagons of the city.

The draft horse is usually driven on a walk, and the difference between a prompt fast walker and the horse that has to be continually urged, and even then has a very moderate pace, means a great waste of time, and time is money and money is profit. Few farmers realize how much of their own time and the time of their hired men is wasted during the year by a slow walking team; more than the value of the team and often the wages of the hired man is lost, yes wasted in this way, and then when the farmer wishes to sell, —. Fast walkers, especially for city purposes command better prices than the ox-gaited team. This qualification depends much upon the training, but proper selection of breeding animals will do more. Some persons may say there are no such draft horses to be found. With such I beg leave to differ and boldly assert there are, and a proper judge can and does find them, and always pays the highest price for them.

The time has come when weight alone will not sell a horse for draft purposes. Men are becoming better posted; they have learned by experience what our markets demand and for marketable draft horses, such as I have described, they are searching, and only such will ever command remunerative prices. The progressive farmer

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must adopt in raising all kinds of stock, "None too good for me. I have no use for poor or cheap ones." Hence he will no longer be persuaded to breed from third class sires or dams; none but first class will he seek. The survival of the fittest for breeding purposes is his only safeguard. In order that the typical draft horse may be obtained as already hinted at in this paper, great care must be taken in the selection of the proper sire and dam; hence a large, stylish, grand, draft mare, mated to a sire that will round out the imperfections of the mare so as to obtain the best results.

I believe that while the evolution of the human race has been fitting mankind for higher and grander planes of existence, one of his labors and one of no mean purpose has been to develop the horse; to mould and adapt him to the ever changing demands of the period; to improve him in size and strength and make him more beautiful and useful. No matter how many giant forces man may be able to make subservient to his will, the typical draft horse must yet remain his faithful servant, the pride of the farmer's and teamster's heart.

Let us now reason on the basis that not another importation is to be made to this country of any kind or description, for we have many choice selections from the four great draft breeds of the world. Make certain of the selection of your matrons, the sires will take care of themselves, and America and Yankees alone can produce the typical draft horse for the world.

She alone of all countries possesses all the requirements for producing such horses. And this nation is limited in territory for the work. The area of country in which draft horses can be grown to advantage is not so great as some suppose. It is subjected to some severe limitations, for instance, the draft horse cannot be grown profitably on poor land. After he is grown he can be kept on land rich or poor if properly fed and groomed. He, while growing, to be made profitable must have land that will produce big grass; this rules out the New England states and most of the cotton ststes, and nearly everything west of Kansas

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and Nebraska, except possibly a few valleys among the mountains. The territories can grow good, wiry, large, much enduring horses, and grow them cheaper, but the environments will not produce anything heavier than light draft horses. The topography of the country is a limitation to the growing of draft horses.

No mountainous country has yet ever produced a heavy draft horse; steep hillsides are not adapted to large animals of any kind. Sandy soils will not produce heavy draft horses, because they lack the ingredients for growing muscle and bone. Swampy lands are not suitable for sound feet and limbs to grow upon.

Then there are commercial reasons or limitations to growing draft horses. Where pasture costs from two to four dollars per month and hay from twelve to twenty dollars a ton, it is folly to think of producing horses at present prices. Three years feed to say nothing of the money invested in the dam, the service of the sire, risk of life and accident and the labor is worth more than the horse will sell for, hence Pennsylvania, one of the greatest consumers of draft horses, does not grow enough to supply her wants. Neither does New York or Ohio. They buy a large per cent. of their horses in the West, and will buy a great proportion of them in the future, and as the portion of the United States is limited in growing draft horses, why should not that portion which is adapted, of which Wisconsin forms a part, stop paying out so much money to foreigners for their sires? What a bonanza they are having! They smile as they pocket our shekels. They inform us that the draft horse in all his glory and perfection can only be grown on European soil. Now it is possible to produce a draft horse in America and right here in Wisconsin that shall win not only at our national and international horse shows, but at the European horse shows. Must we for the next century to come depend upon foreigners to raise our stallions for us? What advantage has an imported stallion over a home bred one? None. Will Europe's 75 cent oats grow a better horse than our 25 cent oats?

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Is her grass better grown on lands whose rental value per annum is more than the actual value of our lands? Or does a voyage across the ocean add to the value of the horse? We all know it does not; Everything then being in favor of Americans raising their own full bloods why hold on to the fossilized idea that we must go to Europe for the perfected horse. We have in this country today some of the best draft stallions that the old country can produce.

Let us turn our attention more to the importing of mares. Yes, but the importer tells you there is nothing in it, he is looking to the future for himself and that is, a sufficiency of mares once in this country, an end to the importation of stallions would soon come. We feel grateful to the importers for the enterprise and money they have invested, and we are willing to write them on the roll of public benefactors but we are looking forward to the time when we can relieve them of the necessity for making such perilous voyages on sea for us, to the time when an American farmer can be the happy owner of a pure bred draft mare, can produce a stallion that does not cost him half the price of a good farm. Stallions more cheaply produced, could be more cheaply stood and a greater profit to the stallioner. Let us then import more mares and if our importers can see nothing in it and will not, let a few forehanded farmers in each county club together and import their own mares. To the careful and intelligent breeder this enterprise seems a very promising one; while considering this subject let me make some suggestions at this point upon the subject of dams. We often hear farmers remark when a mare is broken down and a heap of infirmities that "Oh she will do to raise a colt from." Such a system cannot be too strongly condemned. A brood mare should be young and vigorous, her constitution should not have been sapped by continuous years of excessive toil and heav feeding. Worn out mares are not suitable to breed from.

Now to describe the typical draft mare for breeding purposes, let us commence at the ground. Her feet should be tough and open, free from ringbones, the pasterns shoud be strong and not too perpendicular; the cannon bone should be

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short, flat and broad, from a side view, and should have a flinty appearance, a nice fringe of silky hair, not too much of the foreign imported hair ornaments. The hocks and knees should be broad, the latter from the front and the former from a side view. The thighs and arms should be big and muscular and set well on the outside of the body. She should have a wide chest and erect crest, the head should be clean cut and the eye lively, indicating sense, docility and pluck; neck, good length and well set between the shoulders, which should be slanting and not too perpendicular, a mare should not be too short backed, but should have length and room.

The ribs should be well sprung from the backbone and deep both before and back. The quarters should be fairly long and not drooping; viewed from behind they should be broad over the top and across the hips, as she goes from you she should leave you well. Avoid leggy, split up mares and be sure they are sound in every respect, her temper right, for the offspring often takes after the dam in their nervous energy; with both sire and dam as I have described we will surely, as far as nature is concerned, have a typical foal for a draft horse. Much is yet depending before the matured horse is produced. Hence care, feed and exercise from the colt to the horse, are next to be considered.

Much of the profit on the horse that will go to market when matured depends on the care that is taken of the colt during the first winter of its existence. Their foundation will then be laid and if this be a narrow one the superstructure will never be imposing nor the animal sell for a first class price.

In order that we lay a proper foundation for a profitable horse, his feed must be generous and of the right kind that will develop both bone and muscle. Good, clean, sound oats and bright, clean hay with bran meshes cannot be excelled as food for the colt and plenty of it. If you want a stunted colt, neglect the hay, oats and bran, let him run to the half-rotted straw pile and you will have him to perfection. Muscular development is wanted. Therefore exercise is needed, don't keep the colt in the stable all winter.

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Give him a good comfortable yard in which to run, it is his nature to take abundant exercise and hence abundant food is necessary, as well as a good comfortable stall in which to rest. With proper attention and care the colt at one year old should weigh from 1,000 to 1,200 lbs., the foundation is then secured and the same care with the two and three year old colts will give happy results. Colts over one year old will not lose flesh, will preserve health and vigor, and will even grow in winter, with proper food, air, water and not too close confinement. The typical draft horse will ever be in demand, neither steam nor electricity will dispose of him, but as has already been demonstrated, create a demand for him. In short, the typical draft horse for the twentieth century must be at least 1,600 pounds in weight, elastic in movement, perfect in development from hoof to the tip of the ear, of good fashionable solid color, and inherit the disposition and style of the Arabian or Morgan, and to reach this type of horse in the United States, shall I say it? yes, I will, the government through the agricultural department of states, should appoint experiment stations in connection with our agricultural colleges, and employ experienced breeders to follow certain kind of breeding with specific ends in view, and then we will reach the acme not only of the typical draft horse, but of every other kind of typical horses.

DISCUSSION.

The President—A few moments will now be given to the discussion of this paper, and upon such questions as may occur to you.

Mr. Faville—I haven't any special questions to ask on it. I simply want to commend the paper as a whole. I think it is brim full of most excellent suggestions. While I do not believe we shall carry them all out right away, if we get as near it as we can we shall get a good many better horses than we have got now. He recommends not breeding from any mares that are not sound. I don't believe

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we should breed many colts in this country if we adhered to that idea. The idea is all right, but I don't think it is quite practical to carry it out.

Dr. Woodford—In coupling the horses would you make the selection in regard to the mare being larger than the stallion, or the stallion greater in size than the mare?

Mr. Fisher—I think the mare should be the largest.

Dr. Woodford—I hardly agree with him as regards that. Now you may take nature right through and you will find in all breeds that the male predominates in size, and in some cases to quite an extent; and I think that that is the natural way of breeding, to have the male the largest.

Mr. Faville—We propose to improve upon nature a little. I don't think they knew exactly all about it. In this nineteenth century we are getting ahead.

Mr. Grism—I would like to ask the gentleman if he is a farmer?

Mr. Fisher—I am, sir.

Mr. Grism—Have you made a business of raising horses?

Mr. Fisher—Yes, sir.

The Secretary—It is a reflection upon the secretary of this society to infer that gentlemen have been assigned subjects for discussion who are not able to handle them. I have not asked men to come here and present papers unless I knew they were posted upon the subjects they proposed to talk about.

The President—I don't hardly think the point is well taken. I think there are men who can talk very intelligently on the horse question that are not farmers.

Mr. Grism—Will you allow me to ask him if he raises horses?

The President—Ask him any question you desire within the bounds of propriety.

Mr. Grism—You raise horses?

Mr. Fisher—Yes, sir, I have been in the habit of raising quite a good many.

Mr. Grism—In all my experience with horses I have never seen one that would fill that bill. Now he has described a perfect horse. I claim there is no animal perfect,

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not even man (Laughter). The idea of a farmer wanting an 1800 pound horse. Now think of it. Take him on the common soil; he would have to have boards under his feet; he would go right down to his pastern joints; and to his knees on some farms. In regard to a man taking an 1800 pound horse such as he describes, and wanting to go ten miles; how long would it take him to go and come? He would have to take his breakfast, dinner and supper with him. Now I honestly don't believe that there ever was such a horse raised in Wisconsin, or ever will be, that fills that bill; because it is perfect in every respect; not a single thing left out, color, everything you can think of. Can farmers raise that kind of horses? How many do you suppose the common farmer can raise, say the man that has not got a million dollars behind him? There isn't one in a hundred farmers can do it. You have got to have your imported mares, or mares equal to any that are imported; and your stallion the same. You have got to have the style just right. Where is the man that can get all those things combined? Do you know where? I don't, and I doubt if there is a man here does.

Mr. Faville—Wouldn't it be desirable to raise that kind of horses if we could?

Mr. Grism—What is the use of talking nonsense?

Mr. Fisher—In answer to the gentleman's queries I wish to say this: There is nothing impossible with an American. Now I believe the twentieth century will witness a great change and improvement in all kinds of stock. I believe it is possible to do away with lots of these lunkheads and horses that have been passed off on us by importers, composed principally of flesh; and improve those horses by picking out the best dams and sires, so that they are even capable of going ten miles an hour; so that they will sell in our cities for prices that will pay the farmers to produce them, and for raising them and using them on the farm. I have given my ideas of the typical draft horse in this paper and I believe this country will witness the day when we will have them.

Mr. Grism—You and I will never see it.

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The Secretary—The audience will please bear in mind that Mr. Fisher speaks of the typical draft horse. He is not describing the horses that are found upon all your farms, but he is simply setting up a type of the horse that we should look to, and try to make our animals correspond to, as closely as we can. A man that doesn't fix his aim high in the way of the type that he seeks to reproduce is going to make very bad work of it; and I want to submit that my friend Grism's idea, carried to the full extent, would certainly bring about the state of affairs that he indicates and deprecates at this time. I want to commend very strongly the paper of Mr. Fisher. I say he has described to us just the kind of a draft horse that we want to produce; and his paper is also to be commended in this particular; he is not claiming for the draft horse the qualities of the road horse. It seems to me that we make a mistake when we try to combine these two. There is a marked distinction, and must always be so considered, between the two types of horses, the road horse and the draft horse. Mr. Fisher has given us a good type of the draft horse. Gen. Bryant will do equally well when he comes to his topic, the road horse.

Mr. Martin—I think Mr. True might have carried his assertions a little further. My theory is that he should separate, and in fact he did not connect them, neither did he separate them, but the draft horse and the farm horse to my theory are just as far separated as the draft horse and the road horse. This gentleman's point is well taken perhaps, relative to the weight of farm horses, but this other gentleman's paper is not on the farm horse, as I understand it. It is the draft horse. I haven't got any use for these 1,700 or 1,800 pound horses as a farm horse, but he has set up a good figure there for a horse, and a good figure for the farmers of Wisconsin to grow as a draft horse. The horse that you want to grow for a draft horse is the horse that they want in Chicago, in Milwaukee, in New York, in St. Paul, or any of those places; a great big sound, clean-cut, fine draft horse, and you will get a good rousing price for him. There is no reason on earth why we

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should not attain and put up a mark to work to in horses as well as in hogs, even if they do sleep in the ground sometimes. You can't get the mark too high.

Mr. Emerton—What is the farmer raising horses for? Is it for himself to work, or is it for sale. If the farmer wants a horse to day for his own work, and he wants to go out and buy one that will weigh anywhere from 1,100 to 1,400 pounds, the man that raises it is in a pretty poor boat, for we can get plenty of them at from $60 to $70 and $80 that fills the old gentleman's (Mr. Grisim's) picture of the common horse. It is neither a draft horse nor a carriage horse, and has come about by this mixed breeding and careless selection which he represents. Now I don't think there is a farmer here but what, if he is going to raise a horse, rather raise a draft horse, if his mind runs in that direction, than raise a scrub. I hear them say all around me here that they have use for heavy horses on farms; and a man who is able and understands how to raise horses will almost always have something that he can drive to and from town, and let his work team rest.

Mr. Youmans: I want a horse that can move a load when I hitch him to a load, and when I want to dispose of him I can get a good price. As a farmer I say there is more money for us raising the draft horse and following the idea as near as possible. It means money to the farmer.

Mr. Martin—As a sale animal I agree with this gentleman, but to get right down to good solid work on a farm where your horse goes out after breakfast at 6 o'clock in the morning and works until 6 at night—I speak from experience somewhat to—I cannot begin to get the work out of a big horse and keep them up that I can get out of a 1,200 or 1,300 pound horse. I live close to the lumber belt and our lumbermen are very glad to let some of their men take their horses in the summer to work. I have been so fixed that I could get five or six of their large horses for their keeping; take them in the spring and return them when they wanted to go to work in the fall. I never yet could take one of those big teams and keep them up in flesh alongside of my nice chunky pair of

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1,200 pound horses; nor begin to do the work with them on the farm. But I am not antagonizing this gentleman on his theory of the draft horse. I say separate your draft horses from your horses for work purposes on the farm.

Mr. Mat. Anderson—Some years ago I read a paper on draft horses before this society, and it was amusing to hear the comments. Mr. Grisim was not here then, but I had a very good horseman, Mr. Clark, from Whitewater—you all know the old gentleman, a breeder of horses and sheep—he pitched into me; and so did my old friend Robinson from Mineral Point, or Platteville, because I didn't mention their old mares that they had for breeders that would weigh perhaps 900. They pitched into me because I didn't mention the different blooded horses and so on. Well, now, the difference between a draft horse and a roadster is as great as that between a draft horse and a Morgan. Mr. Clark had an old Morgan mare. That may be the finest breed of horses the farmer could get, but I told him I was not talking about Morgan horses. I was talking about draft horses.

My experience is different from Mr. Martin's about draft horses. My biggest team does the most work and the heaviest. I have a team of horses weighing 3180, one four and the other five. Last spring they did all my heavy drilling with the twelve-toothed drill. They did all my corn planting. In place of putting on three horses I have got a pair of horses that pulled that plow all the time they were not doing other work. I have put them to the heaviest work. They can walk as fast when hitched to the heavy drag as your light horses do. Let them go out on the road, and they wouldn't walk as fast, but put them to a heavy load and they would walk, and you didn't have to rest them every time you went across a forty acre field. They would stand it all day. It is a mistake to say that you get horses too heavy for farm purposes, if you farm right. I farm my land pretty deep. I was accused of following old Horace Greeley's advice to plow deep. Some of you have seen Horace Greeley's picture screwing the oxens

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tails to make them plow deep. In the old time when I come here they used to plow three inches deep. When I come here I plowed six inches deep and I raised a big crop of corn. If I had plowed the old way I would have lost my crop. They said I would spoil the land. I didn't spoil it. When I want to go to the railroad with my horses I can haul a load. I have seen a team of 1200 find an empty wagon as much as they could pull; but my big team could haul a good load on those roads. When you get your turnpikes then your light horses will come in play on the roads, but when you want to plow deep, and do good work, you needn't be afraid of getting a horse too large or too strong or too heavy. Mr. Fisher's paper pleases me very much. I am glad he held out that idea. Mr. True explained that That is an ideal state. Perhaps we don't expect to see such a horse as that, but we want to come as near it as we can. If you go to a horse show I think you will get near to that description of Mr. Fisher's. I will say that some people think I am judge of horses.

John L. Mitchell when superintendant of the horse department sent me to judge horses. I don't claim to be as good a judge as I was ten or twelve years ago; but when I see a horse which pleases me, it generally pleases somebody else.

The President—The next paper is, "The Road Horse for the Farmer," by Gen. George E. Bryant, of Madison.

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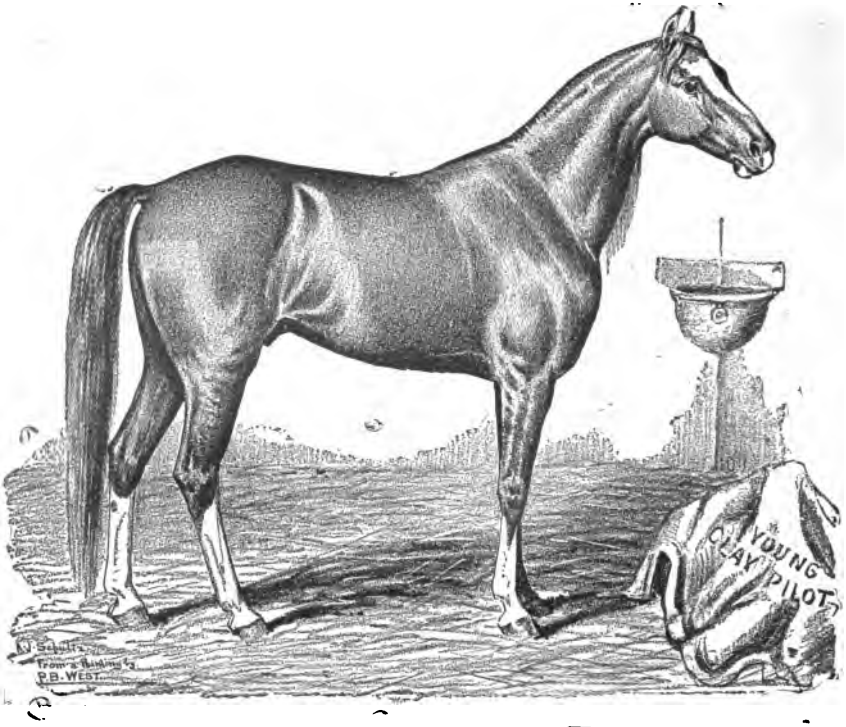

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THE ROAD HORSE FOR THE FARMER.

BY GEN. GEORGE E. BRYANT.

Chance, luck, opportunity, divinity, if you will, shapes the road of the horse, as it does the pathway of his master man.

There have been road horses, there are road horses suitable for the Wisconsin farmer, and as a sequence horses fit for a king, but in this year A. D. 1893, they are not a drug in the horse market of either America or Europe.

There is no family of road horses in these United States. There has never been, since the day when the Puritans stepped upon the rock, but one family worth, to be called the farmers' road horse. That family was the Morgan family; the home of that family was in that part of Vermont where the streams run eastward from their sources in the Green Mountain range to the Connecticut river.

This family of horses was in its zenith in 1847, when the builders of the Rutland & Burlington Railroad, laying their track in the same path, that the soldiers of General Wolf trod, when they marched from Boston to Lake Champlain enroute to the heights of Abraham above Quebec, in what was known in the school books of my boyhood as the Old French War, burst through the mountain gap at Mount Holly, and the whistle of the iron horse superceded the "snap" of the coachmans whip and the "Wope, Wo and Gee" of the eight horse teamster.

The head of this family was a dark bay colt without any white, black mane and tail and black legs, foaled in 1789 and led in the fall of 1791 from Springfield, Mass., to the town of Randolph, Vt., by a schoolmaster named Justin Morgan. This colt died at the age of thirty years, in 1819, from the effects of a kick by another horse. At his maturity he was under 14 hands and weighed less than 900 pounds. He was first known as Morgan's Horse, but as time went on and his sons came into service, he was given

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his owner's full name—the Justin Morgan—and he made that name more famous than all the forty years of "school-keeping" of his master and owner.

The Woodbury Morgan was his most famous son, Gifford Morgan his most noted grandson, and Silas Hale's Green Mountain Morgan his most popular great grandson.

Gifford weighed 925 pounds, and, as I remember him, was a likeness of Justin, as shown by paintings of the latter. Green Mountain weighed half a ton, and was the most showy saddler I ever saw; at the head of a regiment he filled the road full.

In the war of the rebellion I was a participant in many grand reviews; the brown that the silent hero of battle sat, like the chieftain he was; the bag from which McPherson was shot; the spotted horse that Kilpatrick rode in his raids around Atlanta, cannot be forgotten; but when Col. Zebulon Converse, mounted on Gifford, and Col. William Leberveaux on Green Mountain headed the parade at a New Hampshire muster in "the Forties" it made one think of the description of the horse given by the inspired Job. The blood of two other famed sons of Justin permeated this Morgan family—Bull Rush, from whence came the Morrills, a larger, coarser horse, and Sherman, called by some the sire of Hill's Black Hawk, which he was not.

The Morgans showed their Arabian origin in their great endurance, spirit, affectionate nature, intelligence, form and size; they were the ideal farmer's horse, *because* they were tractable, easily caught in the pasture, could plow, draw a sled or wagon, were the best of saddlers, and could go a hundred miles in one day and back the next.

On account of the isolation of their home and the far distance of their breeding place from the marts of New England, they were *inbred*, not outcrossed, until at the end of fifty years from the time when Justin commenced his stud service, a family was established, a family of which brother and sister looked and acted alike. All had the same gait, same disposition, same size and same goodness. I have seen sixty pod teams (a pod is two horses hitched to a wooden straight runnered pung) in a string, drawing the

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produce of beans, poultry, dried apples and dressed pork of sixty Windsor county farmers to the Boston market. Let loose the 120 horses, catch up any two and they were a matched span. If the liveryman of Worcester county wanted to increase his stock he went to the foothills of the Ascutknee mountain and got what he wanted, always the same enduring horses. If the Boston merchant wanted a span for his carriage, he sent to Zack Parker, of Ludlow, Windsor county, and got two horses that could stand the cobble stone pavements for twenty years.

The Morgans had not extreme speed, but they had courage and endurance that lasted day after day, they knew not the Bike or the Kite, but they went up and down with a sure foot the stoney rough paths on their native hills, their Arab blood, condensed by inbreeding, mingling with the blood of the Anglo Arab, Messenger, and with that of the Tripolitan Barb, Grand Bashaw, made extreme speed at the trotting gait in A. D., 1893, witness the Stallion King, Stamboul and the Queen Nancy Hanks.

The Morgan's were small! Grant had not as many inches as Robert E. Lee, but he made him lay down the prize of battle, Corbett did not carry as much avoirdupois as John L. Sullivan and yet he put him to sleep in a battle with fists.

The stated load of Josiah Goodel, from Boston to Brattleboro for his *eight* horse team, was a ton to a horse beside the wagon if necessitated, the load was made *ten* ton, when a yoke of oxen would be hired to help over Ashburnham sand and up the Fitz William hills, these strong Morgan team horses averaged less than 1,050 pounds and put in a quarter of a century of hard work, eating less than a half a bushel of oats per day.

The schedule time from Bellow's Falls to the Ocean of the four and six-horse Concord stage coach with the twelve inside, six outside passengers, baggage for the lot strapped on the rack behind and the United States mail under the driver's seat, as driven by Hiram Hodghkins, Whitcomb Nicholas and Gardner Hall was ten miles per hour includ-

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ing stoppages, and these Morgan roadster horses averaged less than 950 pounds.

Courage! Strength! These Morgans had courage like to that of Gen. Edward S. Bragg; and the strength to win of the quality possessed by Col. John L. Mitchell.

When Justin Morgan was taken to Vermont there were in that region no broad highways, no buggies, no wheels, except for the ox cart; in the winter there were sleds, but the summer roading was on horseback; the minister, the lawyer, the doctor, as well as the farmer, rode to or from the village as their business required on horseback. Wives sat behind their husbands going and returning from church, on the same round Morgan back; only the very well-to-do sported a saddle and pillion.

In the year A. D., 1800, Randolph, Vermont, was a far off country. In A. D., 1810, my father's oldest sister married in Massachusetts and the bridal pair, prayers having been offered in the meeting house on Sabbath day for their safety, were ten days making the journey of one hundred and twenty miles to their new home in Vermont, to day by the cars the trip is made in four hours.

When the doctor's gig, the minister and lawyer's "shay" and the farmer's wagon came into use, it was found that these Morgan horses could go faster and farther and oftener than any horse known in the land, and a ready and remunerative sale for them was found in Boston and the villages round about. Their fame spread; as early as A. D., 1818, a Morgan stallion was taken to Ontario, New York, and A. D., 1822, another was added, from the inbred descendents of these two came the mare that bred to Henry Clay produced George Wilkes.

From the time the Morgan family was founded to the days when it began to decay, there was few of their breeders that owned for brood purposes more than one or two mares. There was no Palo Alto, no Woodburne, no Hickory Grove, no Laurel Hill farms on the eastern slope of the Green Mountains.

Justin Morgan could outstyle, outrun, outtrot, outpull,

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hitched to log or stone, any horse of the region in which his life was spent.

Home surroundings of horses, as with men, has an influence on succeeding generations. The home surroundings in Vermont of the parentage of Luther S. Dixon, Mathew Hale Carpenter and William F. Vilas was not Namby Pamby. So the hard work of the Morgan horses done on hill and mountain side strengthened their courage, broadened their bodies, hardened their bone and muscle, but it shortened their stride; and when the railroads came to New England, and the horse for long day and week drives were no longer demanded, fashion called for taller, more toppy horses for the covered buggy and the coach. Then it was that the county fair associations began to build oval tracks on level grounds and make mile races, and it was found that the shortened step of the Morgan could not compete in these contests with the Messenger from Long Island and the Bashaw Clays from central New York. lastly came the civil war of A. D. 1861, and the descendants of Justin Morgan, famous for three generations as saddlers, went as it were in a body into the cavalry service on the side of the Union, and so the Morgan was crowded out by their second cousins, the Morrils, and they in turn gave way to the Lamberts, cousins yet more remote, and to-day the latter are being pushed to the wall by the California bred colts, descendants of the brothers Harry Clay and Clay Pilot. There was another breed of horses, they never approached the dignity of a family, grown on the west side of the Green Mountains, the Morgans having been bred on the east side, called Black Hawks, they took their name from a horse sired by Young Traveller, a son of the Anglo Arabian Traveller, foaled in Durham, New Hampshire, in A. D. 1833, and sold to Benjamin Thurston, a tavern-keeper of Lowell, Massachusetts, and by him sold to David Hill. The horse was taken in A. D. 1844 to Bridgeport, Vermont, where he died in 1856.

The Morgans were at the height of their fame when Black Hawk's colts came into notice, and some folks called them Black Hawk Morgans. Alian Thompson says "that name

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would not stick to them any more than water to a duck's back." Zack Parker, the noted span matcher of Ludlow, Vt., told me in A. D. 1849 that "they were dooryard horses," that it took four days to drive them from his place to Boston, while it only took a day and a half for the Morgans.

There is a lesson that can be read in the career of Hill's Black Hawk. He had thirteen years in Vermont, was mated with 1,712 mares, living under a lieing pedigree, his owner and the owners of his colts had the assurance to compete with Morgans at the state fairs in the early fifties. After he was dead it was found out that both his sire and dam were got by the Anglo-Arab Traveller. Inbreeding enabled him to fix a type in his progeny, but outcrossing obliterated the family. Will there ever come another family of horses when all of the family shall look and act alike, made as it were in one mould, as were the Morgans? It is not probable; the tendency of horse growers in this counry is to outcross, not inbreed, and outcrossing never did, never will make a family. The chance, the opportunity will not be carried out in this trading, swapping Yankee notion.

Within the last quarter of a century the opportunity, the chance to found a family fit for the time, fit for the generation born since the war of the states has been offered, but it was offered a Jew, and he sold it to Gentil s for lucre, if not for pottage. In 1869, L. J. Rose, a grape grower, bought a stallion colt and four fillies, the get of Clay Pilot, from the farm which has within the last year been made the show grounds of the State Agricultural society, and took them to Pasidema, California, where from isolation, as Vermont was isolated in A. D. 1791, he was compelled to interbreed; thereby he started a family that it has puzzled the world to keep up with at the trotting gait; but he sold his opportunity (true his sales double discounted all others), and went back to his wine vats and his galloping machines.

In A. D. 1883, Mr. Rose brought to Chicago some of these inbred colts and sold them at public auction, and while the price they brought was not sensational, it was

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noticed by your then secretary, now Congressman Clinton Babbitt that it was much greater than market quotations, that the colts were fast steppers, and for the most part were bought by breeders living east of Buffalo, and he requested me to tabulate the pedigree of their progenitor, Clay Pilot.

I knew as a colt he was brought to Wisconsin in A. D. 1864, by Colonel Christopher A. Morgan, an officer on the staff of Maj. Gen'l John Pope, of the United States Army, that he was three years old in the spring of A. D. 1865, the spring I was first elected judge of Dane county. When I first saw him in company with Orrin Hickox and Gilbert Dutcher at Milwaukee, I knew that here and there in Wisconsin were sons and daughters of him that were good roadsters, that James Fisher, Samuel Klauber, F. B. Larkin and Father Vahey had mares in this city, sired by him, that did not like other horse's dust. I found on looking at the John H. Wallace register, that on the dam's side he had been given *three* pedigrees; two were physically impossible, and the third s tarted out with a lie as to his breeder and year of his birth, hence I went to the owner of his dam, Mr. O. B. Gould of Franklin Fournace, Ohio, and I found that his dam was not by Mambrino Chief, not by Pilot Jr., that she was not a catch filly. I knew his sire was a winner over all competitors as a sucker to a five year old at the American Institute Fairs in New York city, that the judges at that fair in A. D. 1852, publicly pronounced him, "the best stallion of any family of horses in America," that Indian Queen, the dam of this sire called Neves Cassius M. Clay, Jr., was not only individually good, but was more times and stronger imbued to Messenger than any I had ever heard of, and when I found that Lady Pilot, the dam of Clay Pilot, was sired by the Canadian Morgan, Pacing Pilot, out of a daughter of Gray Eagle by Diomed, from a dam by Betrand by Sir Archer by Diomed. Seeing the double currents of the blood of Messenger and Diomed mingling with that of Juetin Morgan and Grand Bashaw and not an out cross, I said to Mr. Babbitt, your secretary, no wonder this horse, though for the most part kept in

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the Milford woods, got good colts, for no horse in America carries better blood.

Having proved the pedigree, which I shall ask your secretary to put in tabulated form on a page of your next annual report, as a memento to his breeder the gallant soldier Christopher A. Morgan, and knowing how the Morgan family were builded, I read a paper at your convention in A. D. 1884, in which I showed how a family could be established with the blood of this horse then left in Wisconsin. Yea! Move! I asked the Hon. J. J. Case, with whom I had some property associations and who had wealth, and loved a horse, to start the family, he replied, "It was not fashionable," and in his breedings kept on outcrossing. The sales in the market of New York City last month, vindicate my theory.

I besought my friend John L. Mitchell to make the family, he laughing replied "I was a Clay Pilot as well as a Jersey Crank," but he went and bought the best daughter, save one, in the state, of the horse, and latterly has placed a Jersey cow in competition at the Columbian Fair. I pointed out the way to Loui Dousman, who loved to see his native state Wisconsin at the front, and he said he would shape his breedings in that direction, but death took him across the dark river, and the opportunity passed.

In A. D. 1889, Mr. Rose led into the American Institute building in New York city, forty-six inbred Clay Pilot colts, coming one and two years old, and sold them at public auction for $120,000. Then it was that the astute horseman, H. D. McKinney, stood up in your annual convention and said: "Clay Pilot has founded the greatest family of horses known in the land." My theory was again vindicated.

Two years later Mr. Rose closed out his trotting horses at same place and same manner at prices more than double of that paid for the stock sold same month at same place, bred at famed Palo Alto.

In the month of January, 1893, two sales have been made in same place and in same manner of these interbred Clay Pilots. William Corbett sold sixty-nine —— head that

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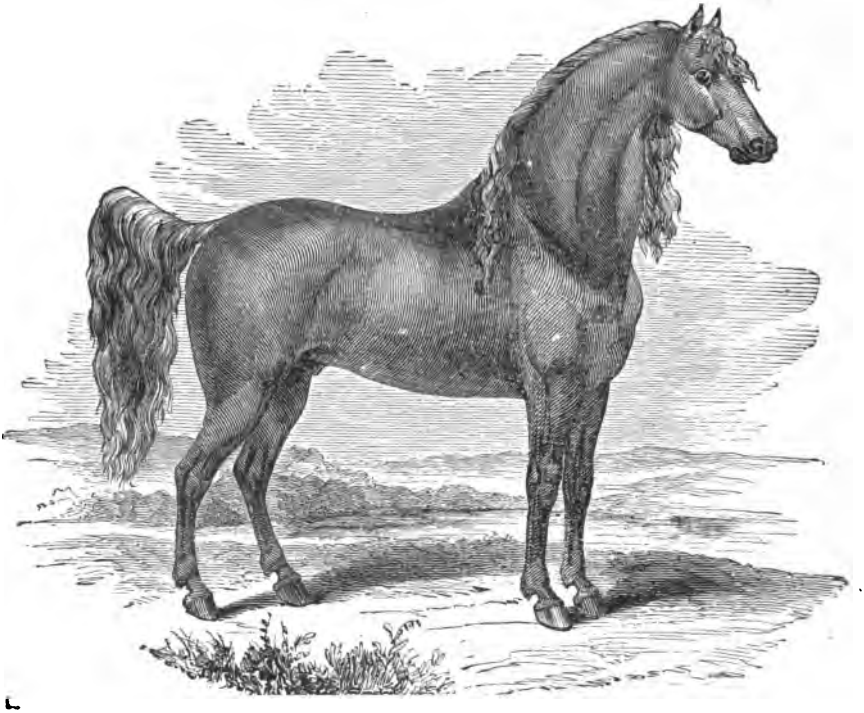

Justin Morgan.

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averaged over $1,500 each, and Mr. Cross, executor of Hobert, sold the horses belonging to that estate, including Stamboul, 2:07½, for a higher average; and the theories of breeding entertained by the crank are again doubly vindicated.

Justin Morgan founded a family, on blood, because he had chance and opportunity. Clay Pilot, with blood and breeding, has almost done it with "luck" largely against him.

["Fact is square edged, it is hard, but it should halt an intelligent people. We have the land to grow horses for the entire civilized world; but before we can export horses creditably, so the buyers will come again for stock and blood purposes, we must create fixed and reproducing types —families with the "top cross" turned to the bed rock, which in the old world is the never failing blood of the "Air Drinker of the Desert."

"The finest and safest saddle horse a man or woman ever backed is the Arab or Arab bred horse. The most cheerful, reliable and satisfactory horse a man or woman ever drove is the Arab-bred horse. The fastest horse that ever ran in two or four mile heat races predominated in Arab blood. The greatest sires of speed with quality predominated in Arab blood, and the finest draught horse that ever pulled through a collar predominated in Arab blood."—HUNTINGTON.]

I beg pardon of the horse growers, horse lovers of this audience for the long time I have occupied in the reading of this paper, but my boyhood, school and university days were spent in the valleys and on the hills where the Morgan Arab flourished, and I loved that horse for his goodness. My Alma Mater where I was drilled and drilled by my good friend in all the years that have passed, Prof. James D. Butler, in Greek and Latin roots, was of those whom the learned president of our state university has been pleased to describe as "a college whose foundation was hard benches and a Latin grammar." I am now an old man and the blood is struggling slowly through my veins. A mile in three minutes is as fast as I care to drive;

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but I do want my farmer friends of Wisconsin, with whom I cast my lot nearly forty years ago, to raise horses that it is a pleasure to ride, a pleasure to drive, a pleasure to feed, and that shall be of profit to their owners and breeders and a heritage worthy to leave their children.

DISCUSSION.

President—Gen. Bryant's paper is now before you for discussion.

Sheriff Vernon—I would like to ask Gen. Bryant one or two questions: You say, General, that Sherman Morgan was not the sire of Hill's Blackhawk. Doesn't it appear in the record that he was the sire of Hill's Blackhawk?

Gen. Bryant—Well, a good many things appear in Mr. Wallace's record. Mr. Wallace, as you know, or should know, was head bookkeeper for a house in Muscatine, Iowa; he was also a preacher. He went to a county fair one day with the second bookkeeper by the name of Turck. This man Turck, a real horseman by birthright, persuaded Wallace to write an account of the fair. He wrote an article and put it in some country paper. It was done so well that it was copied by papers all over the country, and Wallace set himself up as one who knew something about breeding horses. He builded a work which was a great thing and has been of much good to our countrymen; at the same time it has been the means of disseminating many false pedigrees, notably Dexter, the Charles Kent mare, Belle of Wabash and the dam of Clay Pilot. He made pedigrees to suit a coterie of horsemen about New York City—to which place Wallace moved. A dozen men thought they had a "patent" on breeding the trotting horse, but they got knocked out of court when L. J. Rose brought his colts from California and sold them in the same building where their great grand sire three times defeated at public exhibition the two spavined Hero of Chester.

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He was also vindicative and spiteful. If he got mad at a man he would take down his old volumes and change the pedigree of his enemy's horse to suit himself. He got up a pedigree of Hill's Blackhawk, founded, probably, on letters that he got from Vermont. I corresponded with him in the early days when he was getting his first book up. The fact is: Hill's Blackhawk was foaled in 1833, in Durham, New Hampshire, the property of a man named Twombly. Twombly sold the colt to Thurston, who kept a tavern in Lowell, Massachusetts, the place where a man named Ben Butler lived. He was a good horse. He could trot close to 2:50 and that was pretty good for a horse of his day, generation and country. Mr. Thurston sent that horse up to Bridport, Vermont, to David Hill. There he stayed thirteen years. Now he went up there in 1844, just at the time or just before the time, when the railroads were being built, three great lines that went up from Boston over the mountains through the different gaps into New York and Canada. He had the advantage of thirty years of the inbreeding of Justin Morgan blood. He was used to mares predominating with this blood. Aside from that, on the west side of the mountain some thirty years before, there had been taken from Long Island a horse called Bishop's Hambletonian, a son of Messenger. He had daughters and granddaughters of that horse to be mated with. When his colts got five or six years old the Morgans had been taking everything at the fairs and everywhere else, and Hill's Blackhawk come in with a string of his colts at the fairs in Middlebury, Rutland and Montpeliar and they contested for honors with the Morgan horses. They were taller, longer, more stylish, and because the name of Morgan had been so popular and so long bred in that locality some folks thought they must call them Blackhawk Morgan, but as Allen Thompson said, the name wouldn't stick to them any more than water to a duck's back.

Mr. Vernon—Isn't Ethan Allen recorded as a Morgan?

Gen. Bryant—Well, yes, Ethan Allen was a Morgan. He is recorded in the stud book as by Hill's Blackhawk; but he

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wasn't If Ethan Allen had been by Hill's Blackhawk he wouldn't have been a Morgan. Ethan Allen was by Flying Morgan, who was by the Hackett horse; there is some dispute about Flying Morgan's dam, whether by Woodbury Morgan or out of this same Bishop's Hambletonian, son of Messenger. Ethan Allen was sired by Flying Morgan. Any man who will take up the little pamphlet furnished by Allen Thompson, of Woodstock, Vt., and read the testimony through as to the breeding of Vermont horses, particularly Ethan Allen and Hill's Blackhawk,—if he don't say that Thompson proved the case, and that any man who said to the contrary should be forever prohibited from sitting on a petit jury, then I give up my guess Now this is the fact: I have seen all of those horses. A fellow by the name of Judd Holcomb, a Union soldier, lived over at Ticonderoga, and there kept tavern; where we used to leave our horses when we went up in the mountains to Lake George, fishing, in my boyhood days; then a wild country. A doctor from Burlington who owned Flying Morgan drove down to Holcomb's and left his stallion there while he went up to the lake fishing. Halcomb had a mare which he had already bred to Hill's Blackhawk. After the doctor had gone up in the mountains she came in heat again, and Holcomb took the mare and bred her to Flying Morgan. Aside from the proof of breeding, I say that that colt was by Flying Morgan instead of Hill's Blackhawk, because he looked just like Flying Morgan and not a bit like Hill's Blackhawk.

Mr. Emerton—If I understood your paper right it was a history of the Morgan horse; and it was the best I ever heard. You read it before us to induce us to raise the driving horse. The typical horse you have described was about a thousand pounds.

Gen. Bryant—A thousand to eleven hundred pounds.

Mr. Emerton—About how high did you say they stood?

Gen. Bryant—Those horses were low; they stood 14 to 15 hands.

Mr. Emerton—Would you advise the farmer for the sake of breeding to sell, to try to raise that class of horses to-

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day, and call it a farmer's driving horse, or farmer's general purpose horse ?

Gen. Bryant—If the farmer could make a breed of horses equal to the Morgan horse I would say do it. I don't know as he can.

Mr. Emerton—What lesson are we to draw from your paper as a practical lesson?

Gen. Bryant—The lesson I have sought to teach you is that this Morgan family was made the great family it was by in-breeding, not by out-crossing. The tendency of the American people has been to out-cross continually, not only their animals but themselves. It has been the end and aim of trotting-horse men. I think it is going to be less so; but in the past if a trotting-horse man heard of a fast horse that was what he would try to breed to, regardless of blood lineage. As Mr. Case said, "it wouldn't be fashionable to breed up a family" (the way I propose), "but we must go off and breed to the fastest horse we can find if you want to get speed."

Mr. Emerton—Then you did not intend to give us instruction where to go?

Gen. Bryant—No, sir; I would advise you to get as near to the horse that God made in the beginning as possible; the pure Arab horse that can be found in its purity in the Euphrates valley. If you can get those horses you can get blood that can be moulded. There are Arab horses besides those in the Euphrates valley. There are families of Arab horses on the continent of Europe more than a hundred years old, kept pure as when they came from Arabia; but the titled men who own them are all the time trying to get through the Englishman more of that blood to keep it in purity.

Mr. Emerton—The reason I ask you is that it is the possibilities which surround us which we have to draw from. I ran across a horse buyer from New Hampshire, Peterboro. I got him to come up in Columbia county, telling him there was a good class of draft horses, or especially some good colts there. He was looking for the Morgan horse. He gave your description of him as you and I and

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younger men know him to be; but every time that buyer would find a Morgan horse in formation it was never quite large enough; never quite long enough in the neck and did not stand quite high enough for the horse market back in Peterboro. For that reason it seems to me with the Morgan horse as a type we have got to get something else higher.

Gen. Bryant—The Peterboro horse buyer, instead of looking for the old original Morgan horse, was looking after the Black Hawk for carriages and buggies. Peterboro is a cotton factory town on the Contocook river, east of the Monadnock mountain. I know its people and the kind of horses they want.

The President—As I understand your theology, you believe that God placed the perfect horse on earth in the first place?

Gen. Bryant—I believe that God made all things, from man down to the woodchuck, perfect in the beginning.

The President—You don't think He started out with the wild ass and we have been developing the horse?

Gen. Bryant—No, sir.

Mr. Vernon—What is the difference between the Morgan and the thoroughbred?

Gen. Bryant—The Morgans were descendants of Justin Morgan; the one I have described as taken from Connecticut to Vermont in 1791 by the schoolmaster Justin Morgan. He was an Arab horse, or an Anglo-Arab horse. Hill's Blackhawk was a son of young Traveller, a son of old Traveller, who was another Anglo Arab horse, but of a different formation.

Mr. Arnold—What is the opportunity of getting this Morgan horse in with this stud book they have of the Morgan?

Gen. Bryant—I don't know but very little about the stud-book. There has been a great effort on the part of the lovers of Morgan and Blackhawk horses in Vermont. Mr. Battel, who edits a Middlebury paper, and Mr. Thompson, of Woodstock, have spent a great deal of time in hunting up and collating the history of these breeds. Battel is getting up a book. I don't know how success-

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fully. The last time I was back in that country I didn't see any Morgans as I saw them in my boyhood.

Mr. Faville—Hadn't your eyes changed?

Gen. Bryant—It may be, but I saw the Morgan in his *glory*. I can't see as well as I used to, but the horse ain't there. They breed to larger horses. Rysdick's Hambletonian, of course, had a good deal of influence in getting in a coarser, bigger horse.

The three most noted sons of Justin Morgan were Bullrush, Sherman and Woodbury. Sherman was called the greatest. In my opinion he was the poorest. He got his famed reputation because he was the reputed father of Hill's Blackhawk, which I say is not true. Sherman Morgan, as he was described to me by my father, I never saw him, he died in about 1835 when I was a pretty small boy, was sway-backed and dish-faced. Fame comes to horses as it does to men—sometimes unexpected and undeserved. Hill's Blackhawk became most famous as the reputed sire of Ethan Allen, which I say he was not. The fame of Hambletonian 10 was made on the speed of Dexter, his reputed son.

Neither of the three named sires looked or acted any more like their reputed sons than a Dakota squaw looks and acts like a blue-eyed belle of Baltimore. These pedigrees, though recorded in Wallis, are contrary to the maxim dear to every breeder, "that like begets like."

I don't think anybody could get a sounder Morgan pedigree in this state or Vermont than that possessed by Capt. Pool's horse owned at Sparta. There is another horse in the state of Wisconsin which I have never seen, which is a very strong Morgan bred horse. I have seen his pedigree and it traces many times to Justin, as does Capt. Pool's, but mostly through the two horses that I say were not the best. They go through Bullrush and Sherman, while I should prefer to have them go through Woodbury, Gifford or Hale's Green Mountain. Of course there has been a great deal of this blood go all over the country. You know the famous Golddust, of Kentucky, was got by mix-

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ing Arabian with a Vermont Morgan horse which was taken to Kentucky.

The President—Mr. Wallace of the Iowa Homestead desires to say something.

Mr. Wallace—Mr. Chairman and Gentlemen: I do not want to take your time any further than to simply make a suggestion. The question is often raised whether we are to be dependent upon the foreigner for draft-horses to keep up our stock to their standard. I regard this paper as very valuable from the fact that it brings out the history of one breed of horses adopted to the times and circumstances perfectly; to the times and conditions under which they originated. It shows that the environment of America produced for those times the horses adapted to meet the demands. The environment of America produced at the same time in Pennsylvania the Conastoga horse, as perfectly adapted to meet the demands of that time as anything ever bred since; and it is a great misfortune to the horse interests that some man did not take up that breed of horses before the Pennsylvania railroad was built, and give us the American draft-horse equal to the American trotting horse. The environment of America produces trotting horses without a peer in the world. Why not, therefore, produce any kind of a horse that our circumstances demand. We have every condition necessary, and I dislike very much to hear the suggestion made in foreign papers, and sometimes by our own breeders, that we are compelled to go to Europe for any kind of stock to keep up the live stock in this country. (Applause.)

Gen. Bryant—That is true, this is where, as I tried to impress upon you, our folks made the mistake; and where I think they are determined to keep on doing, that is by outcrossing. Now you take that same Conastoga draft family which you have just spoken of. See how it has gone off into other families. A New York merchant bought a Conastoga draft mare close by Philadelphia, out of a six horse team, in 1840, and took her to New York and bred her to Mambrino, son of Messenger, and got a horse called Abdallah, he was the sire of Rysdick's Hambletonian, from

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Green Mountain Morgan.

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whom all modern trotting horses come. The breeding of her dam is unknown. Now I have heard some of the very best men reason this way: They say trotting is progressive; breed a horse that has got a record of 40 to a mare that has got a record of 40, and you will get a colt that will trot in 35. I believe it is the blood that breeds on, and not the time record.

The Secretary—I want to point out the intimate relation between the paper read by Mr. Fisher from his standpoint, and the admirable paper read by Gen. Bryant from his; and I wish this audience could draw the deductions that would forever stop this mixing of horses, and of breeds, for the purpose of producing the general purpose horse. My friend Martin objected to the horse pictured by Mr. Fisher; because he was too heavy for his ideal of the draft horse. Others would object to the horse pictured by General Bryant because it may be too small. I think to day one of the greatest dangers that threaten horse breeding interests in this country (and Wisconsin is no exception) is an attempt to build up the horse that the farmer wants, this horse weighing 1300 to 1400, by a crossing of our light draft or roadster mares with imported coach horses. If the horse breeders of the state of Wisconsin would confine themselves to our best draft breeds and American bred roadsters, if we would tie ourselves to these lines, we would be able to produce horses that would meet the demands of all our varied tastes. In attempting to raise the horse such as Mr. Fisher has portrayed we shall raise a great many horses that will suit Mr. Martin, horses that will weigh 1300, 1400 and 1500 pounds. They are not the horses that are going to bring the highest price as draft horses, but will suit the vast majority of our farmers for the work that is to be done upon the farm. But do not try to breed the 1300 or 1400 pound draft horses. Breed for the best results and the failures of misfits will come in and give you enough of the lighter weight.

Mr. Emerton—The question still seems to be held back, what are we to do? Mr. True, our secretary, warns us not to go abroad for foreign blood for driving horses or for car-

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riage horses. He says that it is impolitic from a breeding standpoint to take the French coach, and bring that blood here. Well, now if history is right, that one class that he speaks against is the oldest bred horse that has a pedigree to-day in the world; and every judge that looks at that horse, claims that it is the old Morgan horse with about three hundred pounds added. If that is the case and we are lacking in size, then some of us are making a bad mistake. We are a young people yet to say that we have got all the perfections here in a hundred years that France has after a hundred and fifty years of national breeding. The point I want to get at is this: What are we to do? What point are we to start from this spring, if we want to raise carriage horses or driving horses that we want to sell. I have a colt at home that I have been offered $200 for unbroke. They say she come by chance. It seems to me we might get blood from chance that would help us, even from the French coach.

The Secretary—I was very favorably impressed with the first French coach horses that I saw in this country. They have now been in use among us for a sufficient term of years to show results. It seems to me that desirable results have not been reached. I have been looking for grade French or German coachers, or Cleveland Bays, if you please, that were satisfactory, and that would go into the market and would begin to sell as well as the products of our best mares from the American bred roadster stallion, and I haven't met them. Those horses are not so strongly bred that they impress themselves upon the dams that they are mated with in this country. The only specimens of that cross that I have met that I liked were where the dams were superior animals of American roadster breeding, that impressed themselves more strongly than the sires. Now we have a variety of families of varied formation and varied size in the American bred roadster, and it seems to me that no quality that is presented by the imported coach horse is better than we can find in the American bred horses that are available to us.

Mr. Wallace—I think I can answer Mr. Emerton's ques-

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tion. The farmers should get from foreign importation that which seems to them most nearly meet their invironment. Then develop it under their own environment, but they should not get the idea in their head that they are always to be dependent on the foreigner.

Mr. Anderson—I was pleased with what the gentleman said about those Canastoga draft horses. I lived there and I can recollect seeing as high as 50 of those four and six horse teams on that Pittsburg pike at one time; a man sitting on a saddle horse, the near horse, and driving those horses with a single line. I had a history of those horses. A young man who went from my place took it with him into the army and lost it. If a Boston man wanted to get a dray horse he would come into Conastoga and select a heavy horse. He wanted him not over 16 hands high. I can recollect those horses before there was any railroad over the Alleghany mountains. I think that we had then as good horses as our Clyde horses are here, or even Shires, or our French horses. They were large heavy horses. I recollect attending a sale where there was one of those draft horses weighing 1,900. A man in those days was proud of his big horse. He kept them very carefully and when they were old he would shoot them and bury them. In regard to the Morgan horse, no doubt in his day he was an ideal horse, but if you had Morgans here to-day and a man wanted a carriage horse he would say, "they are only ponies." They want them 16 hands high and to weigh about eleven or twelve hundred. They want a nice stepper that can go along eight miles an hour easy gait, without hurrying. Don't breed ponies, unless you want nice little driving horses for you wife or boy or yourself on the road. I recollect in 1856 I sold to the landlord of the American House at Janesville, a very fine 1,500 pound horse to drive on his bus. He had also as fine a Morgan as I have seen. I think he claimed it was pure bred, but that Morgan horse, when he put him into his bus to pull a load with my 1,500 pound horse, it would have taken two of them to pull with him.

Prof. Craig—I want to say a few words. I don't believe

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I could speak too highly of the paper that has just been read, and from a historical point of view it has been extremely interesting. There is one point I wish to emphasize—I tried to make it as strong as I could yesterday—and that is the tendency there is today to indulge in cross breeding. It always seemed to me the story of the Irishman's dog illustrates this very nicely. The Irishman was describing the merits of a dog that he possessed, and he dwelt particularly on the breeding of the dog. They asked what it was. "Well, he was one quarter mastiff, another quarter was bull," and he stopped there. "Well, what is the rest?" "Why," he said, "it is just dog." That has been the trouble I believe with the horses here; you have been trying to graft on a number of different breeds to get their qualities, and the rest of it is just horse. Referring to the General's paper particularly, I was greatly pleased with it from a historical point of view. When we look into the history of light horses there is one thing that strikes us, and that is the improving power originating with the Arab. We find those horses bred with particular care, particular pride taken in them, and early in the history of the world they were given great attention. They passed from Arabia into England, and became the foundation of the thoroughbred horse there. I think there is no better evidence of the worth of purity of breeding than to cite both the case of the Arabian horse and the thoroughbred. We find the thoroughbred takes up the work. The thoroughbred I think for the condition of England is superior to the Arab. I have studied the Arab some, and had an opportunity of examining some of them and looking up their pedigrees. I would say that the Arabs, as far as I know them, are good horses in themselves. They stand a little over fifteen hands high and have a bas's of extreme quality. That has been one great advantage come to the thoroughbred in the use of the Arab. The thoroughbred was based on the Arab, and they have been built up from them. We start with them. I think many of the good qualities which have come to the American trotter, their bottom, finish and stamina, their desire to go, has been in-

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herited to a large extent from the thoroughbred. I know that through the Clays and Morgans great benefits have come; but the Morgan, as the General has shown you, has drawn on the original source, and that was the Arab. I just wish to refer to that because I do not believe that to-day, for instance, if we had Arab horses here, I don't believe they would satisfy the conditions of our market.

I also wish to say a word on the other side, perhaps the more practical side, and that is the road horse for the farmer. Now in examining horses and studying them there are some things that have struck me very much in looking at them. There is one thing that will sell a light horse and that is style. I tried to find out what contributes style in a horse. It seems to me to depend more on the slope of his shoulders than anything else. A horse that has a good slope to his shoulders will carry his head up well, and it makes him short in the back and long below; a good reach. Of course I wolud not overlook the head and neck. But a few points contribute towards the roadster. Passing down to the leg, I find that it should be long from elbow to knee; shorter from there down; a nice slope to the pasterns, and good solid feet. I was ashamed at the way horses are shod in America to-day. You go into any livery stable and you will find the feet of the horses destroyed by the way they have been shod. If anything needs emphasizing it is the breeding of better feet on our light horses. The average life of a horse in the city is about five years, and as far as I can find out the place they give out first is in the feet. You look at the horses feet and you see that to-day, as they have been shod in this country, the heel is cut out, the feet spread, the sole comes down, and the frog rots away. I can show you horses where you can take the frog and check it like that (Indicating). Where it is of no use whatever. This all comes through the way the horse has been shod. We haven't given enough attention to the feet. I think if any one thing in the American trotter needs to be improved it is in the feet. In looking at the rest of a horse there is one thing you have got to consider. You have got to get right down to basal principles and take

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the skeleton for the basis. You will find that if you want a good road horse you must build according to a certain construction. His shoulder has a nice slope, and when you get back of the hind legs you find the hind legs more or less straight. All the angles of the hind legs are thrown behind, so as to take a long stride. If you look into the way the bones are constructed in a horse you will find that the front leg just rolls on the body, by the shoulder. No attachment there, but loose skin and loose muscles. Go back to the hind leg and you find two powerful ball and socket joints running right into the hip. Now one thing that struck me in looking at the American trotter was that you are not breeding enough for muscular developement. Haven't got the fullness of hind quarter found in the hackney and some of that class. Now it seems to me the things to sell a light horse are style, finish and a certain amount of speed.

Now yesterday I think great injustice was done to the American trotter. The old idea of the trotter of fifty years ago was wrong. The trotter of to day is not the same trotter of fifty years ago. The trotter of fifty years ago was brought out, bandaged up and hitched to an old sulky which came from the back woods and put on the track and perhaps beat the other horse. You don't find the trotter of today bandaged up with interfering straps and all that. It is better to get them to go without all these things. If the farmer wouldn't exactly line breed, but breed for a special purpose, in a short while you could produce a class of horses which would beat any horse on the face of the earth for the purposes designed for them here. Now there is just one thing further about the breeding of a horse. I was misunderstood yerterday in regard to pedigree. I would make the basal feature of pedigree the merit of the horse. Some people take a bank note and if they couldn't read wouldn't know what the note was worth. It is the same with pedigree. Pedigree is nothing if the horses that enter into that pedigree are not good. I had the greatest lesson I ever had given to me in breeding one day at a county fair, sitting on the hard hemlock benches watching the trotting horses. One of them was doing remarkably

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well. Being interested somewhat in breeding at that time, I asked if the horse was well bred. The friend I was with says, "Can't you see by the appearance of him that he is well bred?" That opened a new study to me and I will say today that when you study breeding you will find you can tell by a horse's appearance whether he is well bred or not. You can look into the history of families of horses and you can tell as soon as you see them, I don't care whether it is a draft horse or a light horse, what his family is and how he has been bred.

Gen. Byrant—In closing this discussion I say I differ with the professor about the value that may come to our people from pure Arab horses. I don't mean the Arab that runs around with Barnum's circus, but I mean the horse that God made; the God horse, if you may choose to call it so. The runner, the thoroughbred comes from him. England bred him, and the English who are scientific people and used for one purpose, and that was running. They have bred him to run, until he has got to be nothing but a galloping machine. He is not a runner any more. They run no four mile races and repeat as they used to. And so the trotting business is going along down that way as fast as it can. There are many trotting machines. We have had some good straight Arabian blood, notably Grand Bashaw, Seward's Arabian and President Van Buren's Arabian. Messenger was an Anglo-Arab horse. What is the difference between an Anglo-Arab and a thoroughbred? Nothing. England called them all Anglo-Arabs up to 1850. When the Yankees got to buying from them they set themselves up in style and called them English thoroughbreds. If a Frenchman buys a horse in England and takes it to his country he still calls it an Anglo-Arab horse. I would like to see some of our people go into the valley of the Euphrates, where men and women live who are descendants of Ishmael and who have kept themselves as pure in their blood and breeding as they have their animals, and get some of their horses and bring them here, the same as England has done. I don't know but one gen-

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uine Arab mare in the United States that came out of the deserts of Arabia.

A Member—Where is she?

General Bryant—Owned on Long Island. She has had one colt by Leopord the horse the sultan gave to Grant, we are liable to get fooled on this Arab business, there are hundreds of German and French Jews ready to flood us with horses such as Barnum uses in his circus, which can be bought in the regions outside of where the original Arabs are, at from $10 to $15; when a pure Arabian horse costs from $1500 to $2000. Last summer the papers said that Al Hassim, had applied at headquarters for space to make an exhibit at the world's fair of his Arabian horses. I wrote to General Rusk, Secretary of Agriculture, and asked him to send somebody to New York to see what kind of horses they were. He sent an Armenian, who knows about horses, and he found the variest lot of dunghills there ever was. There was a man called Al Hassim, who worked for Forepaugh's circus. He had picked up some spotted horses and tried to get them into the country, duty free. It went all over the country in all the papers that there was a man coming with pure Arabian horses for the world's fair.

Some effort has been made to establish a family of horses, with the stallions *Leopard* and *Linden Tree*, the horses the Sultan of Turkey gave to Gen. Grant, as a foundation, bred onto clay blood, that is founded on the Arab "Grand Bashaw." You will see the specimens of this family at the Worlds Fair. It has never been my good fortune to see a pure Arab. I expect to see Noomi and her son Amaza at Chicago. The sultan says: Arab horses must not be taken from his domain. British gold gets some every year.

As to the horses Senator Anderson so constantly points to, they are of the kind that eat a bushel of oats a day and die at nine years of age. The Morgan lived on a peck and put in thirty years of daily labor. I thank you for your attention.

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The President—I take pleasure at this time in introducing Mr. Alvin H. Sanders, of the *Breeders' Gazette*, of Chicago, who will address us on stock raising in Great Britain.

STOCK RAISING IN GREAT BRITAIN.

By ALVIN H. SANDERS, Editor *Breeders' Gazette.*

Judged by the test of distinct breeds recognized in the official classification adopted by Chief Buchanan for the live stock department of the World's Columbian Exposition, Great Britain has not only contributed more of the improved varieties of cattle, horses, sheep and swine that have gained sufficient reputation to entitle them to position as well-defined types in an international exposition than any other one country, but more than all other nations combined, and her herds, studs and flocks have been so heavily drawn upon by American breeders that we naturally feel that the stockmen of the two great English-speaking nations have much in common. Hence a few words by way of reference to existing conditions beyond the sea may be of some little interest to this convention.

Let me preface what I have to say with the statement that I make no claims to exhaustive knowledge of the various British breeds or of British methods. In common with yourselves, I have gained most of my ideas concerning the subject, from observation of the British breeds as we have them on American soil. My direct acquaintance with them upon their native heath is limited to a four week's tour of the island in the month of June last, concluding with a visit to the Royal Agricultural Society's show at Warwick Castle, and as I have already drawn quite freely upon my note book and kodak in the preparation of matter for the public press, I will traverse the ground as rapidly as possible.

In the first place the English and Scotch possess a climate which is exceedingly temperate and (barring their damp winters) exceedingly favorable to the pursuit of ani-

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mal husbandry—a climate not characterized by the terrific extremes of heat and cold to which we on this side are subjected. Their pastures are green and fresh long after ours are apt to be bare and brown. Vegetation in general does not grow as rank with them as under the forcing processes of our shorter and hotter seasons; consequently their grasses are tender and succulent to a most extraordinary degree. Their small grains arrive at maturity much later than our own, with heads heavily filled, and apparently with less of woody fiber in the stems. As far north as the waters of the Moray Firth the magic influence of the Gulf Stream, coupled with a remarkably thorough system of tillage and drainage, enables British farmers to grow all the leading forage crops and roots not only in abundance, but of the finest quality. The weight and exceptional excellence of British oats, and especially of Scotch oats, is proverbial. An Englishman chaffing a Scotchman on the national dish of the north (oatmeal porridge), remarked that in England oats were considered a very good food for horses, but in Scotland *the people* ate nothing else; to which the Aberdonian replied, "Ah, weel mon, but where else do they grow such horses, and where else do they grow such men?" When you read of Scotch stock thriving wonderfully upon turnips and oat straw, bear in mind that the straw is a very different article from that found on most American farms, and is vastly better cared for.

Again, Great Britain is peopled by a race that seems to possess an inborn love of good live-stock. She has an unusually large proportion of practical farmers who delight in the breading, rearing and putting on the market of high-class animals. She has another large class of men who have not only inherited great country estates, but who feel that they have inherited along with their lands certain duties—chief among which is the maintenance of stocks of pure-bred live-stock for the good of the community at large. As a nation the British are fond of their country life. They love their ancestral acres, their hills and dales, their hawthorne hedges and park-like fields. They allow no cares to interfere with the enjoyment of all the good things of

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this world to the full extent of their ability. Their commissary is a subject of constant attention. John Bull dotes upon his rich "joint" or his toothsome chop. He knows prime beef or mutton when he sees it, and is a liberal patron of the butcher. This has been true of the inhabitants of the Island ever since the days of the Saxon Heptarchy. A good dinner is an Englishman's dearest passion. The national appetite for fine meats naturally brought about a demand which the British farmer was quick to recognize and supply. Long before Coates began gathering his notes for the establishment of a herd book in the Valley of the Tees, the shrewd husbandmen of the country were breeding and rearing many different types of butchers' beasts that had attained more than local celebrity. Under these circumstances it is not strange that in the breeding of flesh-bearing animals the British soon led the world. Let us note briefly the distribution and a few of the characteristics of some of the leading breeds.

In the far north we find those comely black doddies, the Aberdeen Angus, and what is now generally recognized as a distinct type of Short-horn (the Scotch), of which latter the present reigning champion of the American show-yard, Young Abbottsburn, is a striking example. The north countrymen are an intensely practical people. The canny Scots have no use for a beast that will not make a good carcass of beef at an early age. They insist upon the wide chest, the broadly arched and deep, descending rib, the well-filled twist, low flanks, neat bone, and compact formation that always marks an easy keeping animal. Prime Scotch beef tops the London market, and the tenant farmers north of the Tweed value capacity to put on pounds avordupois for the turnips, straw and cake consumed far above any mere fanciful considerations—such as style, color, descent from any particular families, etc., etc., and they have the satisfaction of knowing that almost the entire cattle-breeding world has latterly been resorting to their herds for breeding stock possessed of natural flesh and of a thrifty feeding habit; thus demonstrating that fidelity to a useful, practical rent paying type will in the long

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run win as against a mere speculation in fancy points and paper pedigrees. I may say in passing that the English seem strangely prejudiced against the Scotch, and it was not until after the Americans began drawing heavily upon the Short-horn herds of Aberdeenshire that the Southrons woke up to the fact that they were really neglecting their own best interests by failing to make use of occassional crosses of Scotch blood. Her Majesty Queen Victoria showed the way, and a few years since leased and used the most distinguised sire in modern British Short-horn history, the Sittyton-bred Field Marshal, sire of the champion bullock at the Smithfield in '91, and of both the male and female champions at last year's Royal Warwick show.

The Scotch cattle are pre-eminently of an every day, practical farmer's sort. The pedigree mania has never attached itself to their cattle-breeding operations. They claim that the beast that has the largest succession of crosses of animals distinguished for sterling individual merit has the best pedigree; and their method of judging of the value of pedigree *by what it brings forth* is now generally accepted in many quarters where a few years since a different view was held. They claim that the way to breed good cattle is to breed *from* good cattle, and it is to their dogged perseverance upon this basis (while many others were pursuing the butterfly of so-called fashionable breeding) that they are indebted for the unprecedented demand they have enjoyed of late years, not only from both North and South America, but from England as well. The Scotch are good farmers and good feeders. They have no permanent pastures (at least none in Aberdeenshire); certain of their lands being seeded down to grass at intervals in a regular system of crop rotation. The turnip crop is one great product of the Aberdeenshire soil, and they take infinite pains in preparing the fields for the seed. They lay out as high as thirty pounds ($150) an acre reclaiming and draining waste lands, and in the Lothians every field seemed in as perfect tilth as a florist's seed-bed.

In the mists and fogs that envelop the gloomy heights of Argyleshire and in the western highlands of Perthshire, we

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find two extraordinary examples of types adapted to peculiar environments—the west highland cattle and the black-faced highland sheep; the former hardy and active as goats (and in some cases not much larger), and the latter thriving and bringing forth their young high up on the heather-clad ridges of the Grampians, where one would scarcely think a flock could possibly subsist. These sheep, reared amidst such wild and rugged surroundings are, of course, possessed of fine robust constitutions, and are able to take care of themselves wherever they go. They ought to be a dog-proof sheep at least, and the ewes, being prolific and hardy, are in great request in the lowlands of southern Scotland and northern England for crossing purposes—most commonly with Shropshire, Border Leicester, Leicester or Lincoln rams.

In Southwestern Scotland is the home of the shaggy-coated Galloway cattle, the Ayrshire dairy breed (swinging great milk vessels, and many of them capable of fine performances at the pail), and also of the Clydesdale horse; the latter one of the breeds of farm stock of which every true Scotchman is exceptionally proud. The English say the Scotch are getting their draft horses too light in the middles and too high from the ground. They are running wild on "quality," pasterns, feet and "feather," and losing sight of weight and substance. The Scotch retort that the English horse (the Shire) is only a big, round-boned, clumsy hulk, lacking in wearing when brought to the test of heavy loads on granite blocks. I must say, however, that neither charge is wholly just, and that the horse which the best Shire and Clydesdale breeders are aiming to produce has both substance and quality. I saw Clyde geldings in harness on the farms and in the cities of the north that had both heavy middles and plenty of flat, flinty bone with springy pasterns and full wide hoofs. I saw also at Warwick show, in the farming districts of the fen lands of Eastern England, and in the streets of London and Liverpool *Shire* geldings that were neither gummy-legged nor lacking in action or a ; y of bone. There is world of good material in both breeds, and on their well-drained old

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country soils and perfect highways these big, docile, drafty mares and geldings are everywhere in daily use, hitched singly or in tandem, transporting with ease and all necessary dispatch prodigious loads of produce and merchandise. They are not breeding Clydesdales and Shires, as some would have us think, simply to sell to Americans, but for actual, honest home work. They are in universal use throughout almost the entire kingdom wherever heavy loads are to be handled. However, time may demonstrate that these old-world stocks may require more or less modification to meet the necessities of our own environments and climate.

"Shake a bridle over a Yorkshire man's grave and he will turn over. Such is the old saw that imitates the love of the residents of one of England's greatest northern agricultural districts for the noblest of all God's creation among the lower animals. The Cleveland and Yorkshire Bay, the Hackney and the Hunter, as well as the ponderous Shire or cart horse, here find a congenial home, and are brought to a high degree of perfection. The Yorkshire landscape is not unlike that of the fairest portions of the far famed blue grass region of Kentucky. The roadways are perfect, the green fields are tenanted by fine horses, sheep and cattle, and the visitor meets with the real open-handed North country hospitality. At Warlaby in this district I saw the world-famous collection of short-horns, property of the Messrs. Booth, grazing in rich pastures carrying a wonderful variety of herbage, and said to be 300 years old. Many grand ribbed, low-legged cow (roans and white predominating), possessing the most perfectly laid shoulders I have ever seen contained in this herd. They have plenty of scale, fine backs, long, level quarters and neat bone, but the extraordinary refinement of their four-quarters, coupled with some in-and-in breeding, seem to be leading to a little lack of width at the floor of the chest. A tendency to lightness in the lower thigh is also observable. To my surprise there are few short horns now to be seen in the Teeswater valley—the original home of the breed. I drove by the farms made famous in the early days by the Collings, May-

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nard, Mr. Bates, and their contemporaries, but their lands (never very good) are now worn out and neglected. The soil is sour and thin, and a few miserable Irish stores and long-legged sheep now tenant fields once the home of the lordly "red, white and roans." The market place at Darlington, the Black Bull Inn at Yarm, the little ale house at Kirklivington, once the resort of the rare old worthies of this region, are frequented by a different and comparatively inferior class of men. The tall grass runs riot round about the grave of poor old Tommy Bates in that little country church-yard, and his great achievements as a breeder are but a memory. The great truths in relation to selections, out-crossing, in-breeding, and heredity first worked out by these brainy old farmers along the border of the counties of York and Dunham are to this day, however, the study of careful study at the hands of all thoughtful handlers of pure-bred animals.

Further south, in the county of Norfolk, I attended an English Auction sale. The occasion was what the Scotch would call a "displenishing" sale of a draft from the noted herd of cattle, property of Mr. Hugh Aylmer of West Derehan Abbey. The lunch preceding the sale was an elaborate affair, participated in by several hundred people, and bore out all that we have heard of the English as "good livers." After its conclusion there were toasts and short speeches by various prominent breeders in attendance, and then adjournment was taken to the sale ring. Mr. Thornton's methods do not differ materially from those of our American auctioneers, except that he sells by the glass. When he thinks the bidding of any given lot has about concluded he holds the glass aloft, turns it over and the sand begins to run. The last bids made before the sands have all run into the bottom of the glass takes the animal; although if the wily auctioneer thinks he has a few more guineas yet in sight he quickly whirls the glass and starts it running again. In this county we find also the Red Polled Norfolk breed of cattle, supplying many capital milch cows, and the steers making good weights when fed for the shambles. This is also the home of the Norfolk trotter,

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when came to America at an early day old Bell founder, sire of the dam of Rysdick's Hambletonian, a fact which the English never tire of parading as accounting for much of the excellence of the American trotter. Many of the Hackneys of this district are capital travelers. Not large, but compactly built, heavy-bodied, active horses, with first-class feet and legs, and wonderful endurance. In fact, they remind one somewhat of our grand old Morgans, for which no road was ever too long.

Further south we find the Sussex and Devon cattle, and in the midlands the Herefords and various Down breeds of sheep. The Royal show at Warwick was favorably located for a great turn out of the Shropshires and Oxfords and the display of the handsome Downs far surpassed anything I have ever seen in this department in any show-yard. It was called the greatest show of Shropshires ever seen at an exhibition of the Royal society. The English shepherds are thorough masters of the art of fitting sheep for show. The most noticeable feature in the judging as it appeared to me was the fact that much greater attention was given to the quality and condition of the fleece than is usually seen in our western Shropshire competitions. Mere size and flesh by no means excuses in England a bluish skin, a coarse or even fleece and general lack of finish. They seem to prefer the medium size and a high degree of finish and refinement, both in respect to the carcass and the wool. The Oxfords were of grand scale and wonderfully well wooled. The Southdowns were also beautifully brought out and evinced wonderful uniformity and finish. The long wools were likewise shown in beautiful bloom. The comparative absence of flies during the summer season and the moisture of the climate enables the old country showmen to not only get their stock in condition easier, but admits of the growth of great coats of hair, and the British herdsman almost invariably "roughs up" the coats of his younger cattle especially (instead of sleeking them down as American showmen usually do), thus adding materially to the apparent bulk and weight of the animals. The ring for Short horn heifers calved in 1890 was by odds

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Imported Southdown Ram, owned by Geo. McKerrow, of Sussex, Wis.

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the finest string of cattle of the beef breeds I have ever seen. The Herefords were a low-legged, heavily fleshed set of cattle, and the best cow of any beef breed on exhibition, in my judgment, was of this famous flesh-making sort. A noticeable feature in the management of the Hereforshire herds is the regular yearly drafting to the shambles of nearly all the older cows and inferior heifers and bulls. There is but one exclusively dairy breed in Britain of native origin: the Ayrshires. The Devons, Short horns, Red Polls and other so-called "general purpose" breeds supply many heavy milkers and good butter makers, but Channel Island cattle (Jerseys and Guernseys) are imported in large numbers. The Dutch cattle are seldom seen in England, although dairy products are of course freely imported from the Netherlands. The taste of the average British farmer seems to run largely to the production of stock of the meat-making breeds, although the Jersey is now gaining a wide distribution throughout England.

I am inclined to think that the young stock of all the the beef and mutton breeds seen in Great Britain are of rather a "sappier" character than with us; a fact which may largely be attributed to the greater attention paid by the Scotch and English feeders to the provision of ample supplies of green or succulent food. Indian corn is unknown in the British Islands except as it is imported, consequently the growing animals as a rule get more of the flesh and tissue-building (nitrogenous) foods and less of the fat forming carbo-hydrates than our own live stock as commonly handled. True, large quantities of linseed cake and oil meal are used in finishing, but this is invariably balanced with an abundance of roots, or the various grasses and luguminous crops so generally cultivated in this island nursery of the meat-making breeds. We have an immense advantage over them when it comes to finishing cheaply for market; but until we make more generous provision, either through the use of the silo or by the cultivation of roots, for a larger supply of succulent foods for our young animals and breeding stock, I imagine our

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breeders will resort occasionally to the herds, studs and flocks of the British Islands for breeding animals. Fresh blood, if contributed by sound, healthy animals, always adds new vigor; and so long as Great Britain remains the largest consumer of our surplus agricultural products, we have certainly nothing to lose and probably much to gain by a little well-considered reciprocity and the occasional introduction of well bred sires from her old established stocks. But we want only this here.

Our other point of special interest perhaps to sheep breeders and I am done. Without desiring to enter the domain of politics, in view of the projective reduction or abolition of our tariff on imported wools, may not some comfort for flockmasters be drawn from the fact that the most profitable animal to-day in all England in the sheep, in spite of the fact that her docks are the dumping ground for the cheaply produced wools of all nations?

The English do not grow a sheep solely for his fleece, and if we are to face similar conditions in reference to our wool, may we not learn from our cousins on the other side a few lessons as to how to modify our methods to meet changed conditions? More attention to the carcass and to the production of lambs for the market, should go a long ways toward enabling us to give our sheep as high a rank among our animal rent payers, as the fleecy flocks of old England hold among the British breeds of live stock. Wisconsin seems peculiarly adapted to the sheep-growing industry, and I hope the day may never come when our patient little four-footed friends with the golden hoofs will disappear from our agriculture.

It is indeed a fitting demonstration of the practical value of well bred farm animals to find that on the high-priced lands of Great Britain they recognize fine-bred live stock as one of the most necessary of all adjuncts to successful husbandry, and as we have reached the limit of arable land in America and find the question of how to make the farm pay pressing closer and closer every year, we shall probably be forced ultimately to adopt methods modeled somewhat after the extensive system in vogue across the

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water. We must waste less, feed more of our crops on the land upon which they are grown; not undertake to handle more land or more live stock than we can handle *well*, and keep only such stock as will show adequate returns for the food consumed. Economical production is the watch-word of the hour, and it gives me pleasure to testify in this connection to the efficient scientific work along this line being done by Prof. Henry and his assistants at your local experiment station. I found the work of your station being studied with interest by practical and scientific men abroad and thoughtful farmers in every part of our own country are looking to the Wisconsin Station as one of the few institutions of its kind that are doing a grand work in practical directions. I am glad to hear that it is receiving your sympathy and support.

The President—In your behalf and my own I return cordial thanks to Mr. Sanders for his interesting and instructive paper. A few moments will be given you now for such questions as you may desire to propound to Mr. Sanders touching the subject he has discussed.

Mr. Arnold—I would like to inquire of Mr. Sanders if you found in England any Shorthorns that were good milkers, among the breeders that kept up their pedigrees; kept their cattle registered; or did you inquire at all?

Mr. Sanders—I did find a good many such, and to my surprise I found them in the great Aberdeenshire herds, which demonstrates to my mind that it is possible to breed a cow that shall be a heavy milker and that shall also be a great flesh carrier. However, I think it is generally conceded that what they call the un-pedigreed districts, those districts where these Shorthorned bulls have been kept for generations, but they have not kept up herd book records as a rule, turn out more heavy milkers than the cattle registered in Coats' herd book. In fact in western England, which is a great dairy region, the cows almost without exception are the unpedigreed, Shorthorned kind. Some of them are great big, broad-bodied cows, with a heavy flow of milk. I think the unpedigreed are the best milkers,

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although I did see some heavy milkers in the herd of Mr. Duffy, of Aberdeenshire.

The President—These cows you speak of as being without pedigree, have a pedigree, but they are not, as horsemen would call it registered?

Mr. Sanders—Yes, sir; that is the idea.

Mr. Faville—In your judgment would there be any certrainty of those cattle transmitting their milking qualities if we should get them here and undertake to make milking breeds out of them? Do you think we could rely upon them with any sort of certainty?

Mr. Sanders—There is no question but what in those unpedigreed Shorthorn herd cows do reproduce themselves. It has been carried on for generations by practical men, and while they are not recorded, they are really pedigreed, and the type is so fixed that the bulls are prepotent and the dairy quality is transmitted I think almost invariably; quite as much so as in the case of the qualities of the other breeds.

A Member—If those cows were to have a pedigree attached to them would that injure their milking quality?

Mr. Sanders—I am not much of a pedigree man myself. I once heard one of the leading agriculturists of Iowa say that we could make a bonfire of all herd books in existence and begin anew, and we would be better off. Perhaps that is too radical. But there is something in the though expressed. I think the tendency of herd books, and all pedigree registers, is to narrow the lines too much. It is hard enough to breed good live stock when you can have the whole world to select your sires from, but if you have got to limit it to any one book, or as some think, any one family, the chances of success, I think, are remote.

Mr. Wallace—And any one color.

Mr. Sanders—Yes, one color. By all odds the best shorthorns are roans. I am convinced that it is not possible to breed the very best possible type without the use of roan bulls.

Mr. Faville—For milk or beef either one?

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Mr. Sanders—Yes. That is the one distinctive shorthorn color. A color that cannot be counterfeited.

Mr. Wallace—What per cent. of the shorthorns over there were roans?

Mr. Sanders—I should say 75 per cent.

Mr. Martin—I will ask if the original color in England was not white?

Mr. Sanders—That is a question that is involved in some obscurity I imagine. My impression is that the roan is the one distinctive shorthorn color. Cattle of different colors, of course, were used originally, but the roan is the one shorthorn color; no question about that.

Mr. Martin—This last point particularly interests me, and I guess it does my friend Arnold over there also. I am milking fifty cows, shorthorn thoroughbreds and short horn grades, and I have been thinking very strongly of sending to England for a shorthorn bull. I believe from my record the past year of what I have been doing with shorthorns and shorthorn grades, that I am not going to abandon it as a milk-producing herd.

Mr. Sanders—I am glad to hear the gentleman say that, because I approve of it.

Mr. Arnold—What is the color?

Mr. Martin—They are all colors. I am right with this gentleman, only I would carry it still further back of the roan. From the roans back to the whites.

Mr. Sanders—The shorthorned men have certainly neglected the dairy qualities of their cattle. My idea is that a good milker not only breeds longer, wears better, but she raises her calves better. I think those of the shorthorn men who own a herd, in fact breeders of all classes of beef cattle, will say that good milkers are the ones that last and wear.

Prof. Craig—Did you understand that the milking qualities depend on the aim of the breeder? The fact that the short horn has beef qualities, depends on the breeding back of it.

Mr. Sanders—To be sure a man can take one or the other type, and by sticking to it almost exclude the other quality.

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If a man breeds for beef exclusively he will soon lose the milk, and vice versa; but I was greatly surprised in Aberdeenshire, in that great beef country, to find that the very best cows in their herds were wonderfully good milkers; great big beefy, short-legged cows, with great udders. I never saw such perfect short horns in my life, for that reason, that they had the dairy quality along with the fleshing propensity.

Mr. Faville—Did they have the persistent quality of giving milk? We have lots of short horns that will give plenty of milk for a while, but after five or six months, with good feeding they would go dry on me, and get fat. That has been the characteristic of the short horns I have had. I have had some exceptions, of course. You may have seen them, and they had great big udders. I have seen lots of them that I would pronounce splendid cows if I didn't know what the outcome was.

Mr. Sanders—Of course I cannot say to what extent they continued; but at that time they were giving a heavy flow.

Mr. Faville—No doubt about that. I have had forty pounds a day from them; but they did not give the milk long enough.

Mr. Martin—That fact is more due to the man who owns, manages and milks that cow.

Mr. Faville—No, sir; I claim to know how to manage and milk a cow as well as the next one.

The President—By actual experience, or constructively?

Mr. Faville—By actual experience. I was born and bred in the business. I commenced dairying very early in life. Some of the simpler processes before I can remember. But of course I admit, Mr. Martin, that the characteristics of the cow may be changed by the treatment which she receives. You can increase her term of milking or shorten it, by the way you use her; but you cannot overcome her natural propensities.

Mr. Martin—I want to follow him up right on that point, because I think as he does, that I know what I am talking about. I was in the short-horn business, and come pretty

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near letting short horn breeders breed the stuffing all out of my bulls for breeding purposes; but when they got through with their almighty fancy, fictitious prices I happened to have a few good milkers in my herd, and I kept producing their like to a great extent. One great trouble about your short horn breeding is the propensity to breed altogether to beauty, symmetry and beef. We have very nearly bred all the qualities out of our short horns for our present use in these states. You take your short horn heifer and breed her young and milk her right up to calving time again, and you will do away with your trouble.

Mr. Faville—If you can do that; but five times out of six she will go dry.

Mr. Martin—They don't in my herd. It is the man that goes dry.

Mr. Arnold—We had a paper here yesterday by the Professor in regard to breeding for a single purpose, which I believe is approved of by breeders; and the man that has has stock that he can best breed an animal to for two purposes, or what is generally called a general purpose animal, has been hooted at. But it seems to me it is possible to breed in this direction with cattle the same as with sheep, we undertake to raise a sheep that is good for wool, and good for mutton, and the fact is to-day it is the most profitable sheep. Isn't this possible with cattle? Mr. Sanders has seen these specimens of different cattle. He has been with this paper, and has had a large experience. His father had a large experience in this direction; and it seems to me that his opinion in this regard might be of some value to us. I believe that as far as giving milk is concerned it is more a matter of education than anything else. All my heifer calves are raised by hand on skim milk. I have done it for the last four years, and I notice that my heifers now almost universally are good milkers, and they are presistent milkers; whereas they used to do as brother Faville says, dry up very young. The animals that are the best milkers are the best animals to put on flesh when they are dry. I believe in this one purpose cow, or the one purpose man. If you want to get him to the very highest ideal of

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perfection, in one point you must breed and rear in that direction. But you don't make the best all round man in that way.

The President—This afternoon we have a session devoted to dairy interests, and this discussion can be further continued at that time; and as it is 12 o'clock now I think we will adjourn.

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2 O'CLOCK, P. M.

The President—The first number on our program this afternoon is a paper on "The Dairy Cow," by R. S. Kingman, of Sparta.

SELECTION, CARE AND FEEDING OF DAIRY COWS.

R. S. KINGMAN.

I am invited to tell you something about the selection, care and feed of a dairy cow.

1st. Then as to the selection. I will begin by describing two kinds of cows, you may find in almost any herd, one is a close compact, smooth looking cow, straight back, closely ribbed with thick thighs—a perfect type of the symphatic temperament. This is the beef cow, no matter what her breeding may be. You might as well try to make a successful race horse of a Norman as to expect a good dairy cow, made up as above described. This is not the cow I wish to spend any further time, in describing. Neither do you need to spend any time in looking at her if you are selecting a dairy cow for business.

The cow you should select for milk is precisely the opposite in conformation from the one just described.

She is of a nervous temperament and will have more the conformation of what is termed a raw-boned animal. With relaxed appearance, a clear expression of the eye, a broad muzzle, a thin neck, drooping a little at the shoulders,

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or withers which should be thin also, ribs should be flat and well apart. As you pass your hand along her back it will have a rough appearance, with broad and long hips, strong back and pelvic arch, with thin thighs, well apart to make room for the udder; with angular shoulders and plenty of chest capacity for lungs and digestion. She should have muscle like a race horse.

Above all, the dairy cow should be deep through the flank, with a square udder running well forward on belly and well up behind, with teats good length and squarely placed, with long tortuous or ramifying milk veins terminating forward with large aperture. Size is not essential in the make-up of a good cow. In the flank, just above the udder, you may find what is termed the milk gland, which is easily found in a good cow. Just how far this is a guide in the selection of a dairy cow I am not prepared to say. My own observation is that the best cows have these glands well developed. These so far as I know are the important outward indications of a good dairy cow.

The Escutcheon theory I have no confidence in whatever. The real test, however, of a good cow, is the amount and quality of milk she will give in a year. Therefore, test your cows often in some way and know for a certainty which cows are paying you a profit and which are running you in debt. It is not at all improbable but the little scrawny looking cow in the herd that the farmer would sell for a small price to get her out of sight is the very cow that is paying the expenses of the large, fine, sleek looking cow that is the pride of the herd. Test each individual cow often and accurately and know exactly what she is doing, and when you find a cow that is not paying a profit, sell her to the general purpose farmer or butcher; a dairyman has no use for her. When you have found a good cow do not be too free to dispose of her; don't think she is getting old until she has served you at least ten or twelve years. Don't be too greedy for the few dollars you might realize for a few pounds of old cow beef. That is not the mission of a good dairy cow.

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Don't keep a cow that cannot make at least 175 pounds of butter in a year with good fair treatment, and don't be satisfied with your business until your cows average you 300 to 350 pounds butter or more per year. Plenty of cows are doing this. Don't discard a cow for the small amount of milk she gives until you have tested the quality of the mild. Plenty of cows are making from one to one and a half pounds of butter daily that give no more than six to nine quarts of milk per day. Some cows persist in going dry from four to six months in the year. These are almost invariably cows of a beefy tendency and are worthless as dairy cows. Weed them out of your herd as soon as possible. The most profitable cow the dairyman can have is one that gives a fair mess of milk of good quality, and does not incline to go dry more than six weeks in the year. It is necessary for the good of the cow and offspring that she should go dry that length of time. The fact of a cow's going dry a longer or shorter time is largely due to to habit, therefore keep your heifers with first and second calf in milk as near as possible to the time of dropping next calf.

Cows that are fresh in August and September will give more milk in the year than they would if fresh in the spring, for the reason that you can hold the September cow to her milk during the winter and when fresh grass comes she will spring up in her milk and continue in a fair flow till near the time of dropping her calf. On the other hand any man of experience knows how hard it is to keep a spring milk cow in milk as winter approaches. This is one reason why winter dairying is more profitable than summer dairying.

There are many more good and valid reasons why winter dairying is more profitable than summer dairying, but we will not stop to discuss them now.

The profitable cow of to-day has not come to us by chance. She has descended to us from ancestors that have been bred for hundreds of years or more by careful selection of the fiittest in reference to milk production. When animals have been bred for a long time with reference to certain

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qualities, that trait becomes fixed and is transmitted to the offspring with almost unerring certaintv.

But not so with grades and animals of mixed breeding. You often see an excellent cow without any known breeding whose heifer calves make utterly worthless cows and vice versa.

Select a cow whose maternal ancestors for several generations are good ones and you have but little risk to run. Among the average farmers there is too little attention paid to selecting a sire. No sire should be placed at the head of a dairy herd unless his maternal ancestors are known to be good dairy cows with healthy, good-shaped udders with teats well placed.

This law of inheritance is too little studied in building up a herd of dairy cows. Many farmers make a practice of selling off their best animals because they can get a few dollars more immediate money, and continue to breed from their inferior animals. Such a course is fatal to success. The best animals are none too good to breed from, and this especially applies to the sire. Never breed from a poor sire, is a *motto* every dairyman should keep fresh in his mind.

There are a great many farmers who still believe in the general purpose animal, but happily their numbers are growing less every year.

The chief excellences in animals are those that have been bred for generations with a view of developing certain special qualities. After long years, I may say hundreds of years of careful selection and breeding with a certain object in view, breeds of animals are established, and when once established they are termed thorough-breds, or full bloods. A thorough-bred sire, used in a herd of females with no special breeding, is almost certain to transmit his peculiar traits to his offsprings. And when a thorough-bred sire is coupled with a thorough-bred female of same breeding, you can calculate with almost unerring certainty what the off spring will be.

Through this great law of transmission great performers have come into existence. Such noted horses as Kremlin

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and Nancy Hanks and many others are not creatures of chance. Such cows as Pauline Paul that has a test of over 1,100 pounds of butter in one year, and Mary Ann, of St. Lambert, with an official record of 36 pounds of butter in seven days and a record of 867 pounds of butter in one year and many other records as good or better than these that have astonished the world with their performances, are not creatures of chance.

No general purpose breeding ever produced such animals, they are the result of careful selection and breeding for a special purpose for years and, I may say, centuries.

When the best result is desired it is to be found among the animals of special breeding. The idea of a general purpose animal is a delusion and the quicker a farmer can get it out of his head the better it will be for him and the better for the statistics of the country. The greatest excellence comes only by a careful selection of the fittest for the purpose desired.

This brings us to the care of the dairy cow, one of the especial topics to be considered, for without good care of the cow there is no profit in the dairy business.

I would suggest first to every man that contemplates making dairying a business to examine himself and see if he is a fit subject to own a dairy cow or not. If you find you are so made up that you cannot treat a cow as gently as any female of your family, or if you are not willing to superintend your business 365 days in the year, if for either or both these reasons you find yourself incompetent, then never start in the dairy business.

If on the other hand, you think you would find pleasure in the dairy business, by careful selection you will buy a few cows and commence operations. First of all you must make your cows comfortable in well ventilated stables, in all winter and stormy weather. No cow can do her best unless she is every way at ease. It is by no means necessary to have elaborate and costly stables, unless you can afford it, then it is a pleasure of course and sometimes a little more convenient.

Having the stables the next greatest consideration as how

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to fasten our cows therein so as to make them at ease, and at the same time keep them clean. Many devices for cattle ties are in use, but none of them are in my opinion perfect. Some give the cow too much laltitude and you cannot keep her clean, others keep the cow clean but keep her too closely confined, so that she is ill at ease. I refer more particularly to the stanchion especially the rigid stanchion, which should never be tolerated as a tie for dairy cows. There are several ties that come near filling the bill, but the most perfect of all in my opinion is the one I have in use in my barns which keeps cattle perfectly clean and the same time affords them absolute freedom. Keep your cows well bedded for two reasons: 1st, it keeps them warm and comfortable in winter, and 2nd, it keeps them clean. A good cow is of a nervous temperament, therefore on all occasions, be careful not to excite her in any way. In driving cows to and from pasture, never allow them to be hurried or worried by boys or dogs. In the yard or stable never on any occasion, kick or strike a cow or heifer, or prod her with a fork, or abuse her in any way, but on all occasions be gentle and kind to her no matter what she does.

If you cannot control your temper so as to treat your cows as above described, then you have mistaken your calling, and you better sell out your dairy business and go to raising mules. In your habits and methods of handling your cows be systematic and regular as to time. If you feed b efore you milk do so every time, for the cow expects it; otherwise your cow will be disappointed in not getting her feed first, and the chances are that she will not give down her milk fully and freely. When you commence to milk do not stop until you have finished to the last drop. Many cows will withhold their milk in whole or in part if the milker is not ready to take the milk when she is ready to give it down. Any unusual excitement at the time of milking will cause the cow many times to withhold her milk. Let each milker have his special cows to milk, and never change milkers unless you are obliged to do so. If from any cause or neglect a cow is made to shrink her flow of milk you never can get her back again to her normal flow

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until she has her next calf. Remember if you excite or ill-treat a cow you pay for it at the expense of impoverished milk. Now as to feeding dairy cows, there is no formula that I shall attempt to give you, for different farmers have different fodders and grain out of which to make up a ration. I assume that every one knows that there is no food better than good pasture grass for cows in summer, supplemented perhaps with a light grain ration or some soiling crops when pasture grasses fail; and what I say about foods and rations applies more especially to winter feeding.

I have never found anything better than wheat bran, ground oats, oil cake meal, and corn meal, out of which to compound a grain ration for dairy cows. Rye, barley, bran and perhaps other grains may be used in the grain mixture. Cows like a mixed ration of grain and do better on it than on any one kind. If cows are inclined to take on flesh leave out the corn meal.

For fodder I know of nothing better or cheaper or better relished by cows than corn ensilage put up at proper time and manner. Of course corn ensilage is not recommended as an exclusive fodder ration, feed once a day say in the morning 30 to 40 pounds to each cow, at evening feed well made early cut clover hay if possible. At noon feed whatever rough fodder you have at hand If you are obliged to feed timothy hay, cut it early, do not expect to get much milk from cows fed on ripe timothy hay.

A cow should never be fed more than she will eat up clean. Where ensilage does not form part of the fodder ration, I strongly recommend the feeding of roots of some kind at least once a day if possible say mangolds, sugar beets, carrots; parsnips or potatoes, these are not recommended so much for their nutritive value as for their corrective qualities. I believe cows are less liable to have garget when fed once a day on succulent foods. Feed liberally, profits lie in the direction of liberal feeding. Dairy cows should have free access to salt, if not they should be salted at least every other day. It is well to bear in mind that a good cow in full flow of milk will eat

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and drink more than a working ox, or dry cow or a fattening animal.

Good cows have great powers of digestion and assimilation. The wonderful performers are wonderful eaters. The cow Princess 2nd that made forty-six pounds of butter in seven days, the greatest weekly butter record of any cow known, ate forty-two quarts of ground feed per day, besides hay and roots. I do not assume that this is profitable feeding by any means; she was simply fed to see how much butter a cow could be made to give in a given time.

Assuming that a cow is a machine you must not forget that there is a limit to her capacity, and this subject should be the great study of the dairyman. You will hardly be likely to find two cows in any one stable that should be treated alike in the matter of feeding. One cow you may find will commence taking on flesh, and if you attempt to force her milk production by feeding, you will increase the fat and decrease the milk. This cow inclines to beef tendencies. This is the one you better weed out the first time you have a cow to sell. In this same herd you may find another cow that is the genuine dairy cow; you may feed her up to the limit of her power of digestion and assimilation and she will not lay on a pound of flesh while giving milk, but will respond liberally in milk for all food given her.

This is the animal you may pin your faith to. She may not be the handsomest to look at, but she is truly the dairy cow. She will either give you a large flow of milk of fair quality, or a reasonable flow of milk rich in quality. But great care must be exercised in feeding this cow. She is usually a gormandizer, she never knows when she has enough, and an over-feed may put her out of condition.

Cows in full flow of milk must of necessity drink a great deal of water, therefore warm the water in winter to about 60 or 65 degrees, then your cows will drink all they want at least once a day, but if water is very cold and the weather cold a cow will go sometimes a day or two without tasting water, and when compelled by thirst to drink will gorge herself with ice water before she stops drinking,

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and then for the balance of the day will stand in the yard rounded up and shiver with cold. Of course she had consumed the greater part of the feed given her in the morning to warm up the ice water she drank and has nothing left to produce her usual amount of milk at evening, and without thinking the dairyman will wonder why his cow does not give more milk. To-day I wonder that all these years past I did not know and realize how much cheaper it is to warm water in cold weather for cattle with wood or coal instead of warming with hay and grain.

In conclusion let me recapitulate. I want to emphasize a few points already gone over. If a man has no natural liking for the dairy business my advise is do not attempt it. For a man must have some adaptation to the work or he will make a failure. He must be orderly and systematic in his methods, kind and gentle in the treatment of his cows.

Cows to be profitable must be fed and handled with great regularity, and all violent changes avoided. Perfect quiet and contentment is essential to the elaborating of milk by the cow. Again let me emphasise the importance of thorough methods in feeding. Weigh your milk often and test it with the Babcock Tester and know exactly what your cows are doing, and weed out those that do not come up to your standard of a good cow. With my experience I am led to believe that the dairy business, with sound dairy thought and good dairy methods applied will keep the farm in a better state of fertility, will lift more mortgages and furnish the dairyman with a better living and more luxuries than any other ordinary branch of agricultural pursuits.

DISCUSSION.

The President—This valuable paper of Mr. Kingman's is before the convention now for discussion. I hope you will all take part in this discussion, and bring out such ideas as you think proper.

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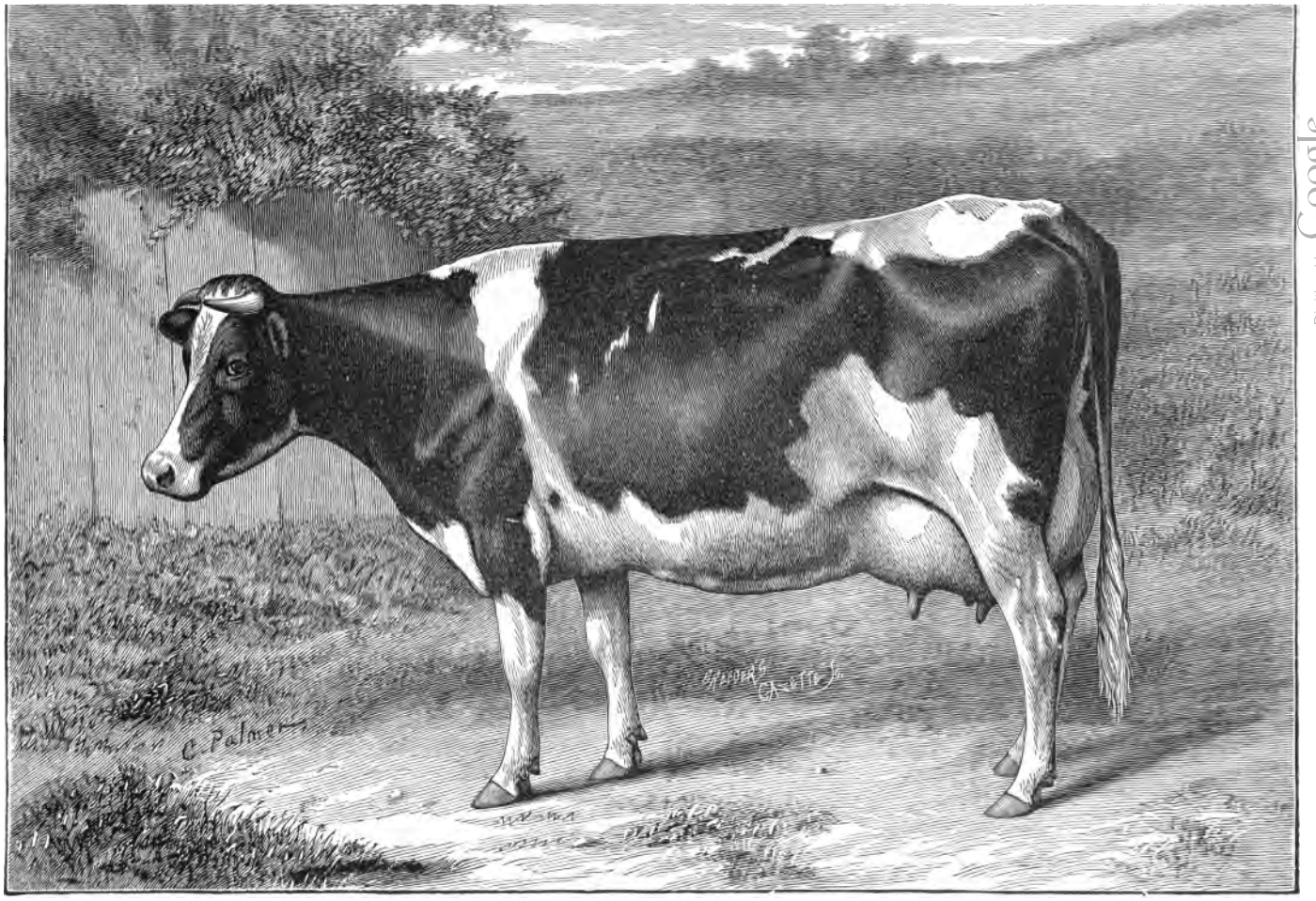

Holstein-Friesian cow Colantha 6714 H. H. B. Butter record: 31 lbs. 7 oz. in 7 days. Milk record: 89 lbs. 5 oz. in 1 day; 2,375 lbs. 5 oz. in 1 month. The property of Gillett & Son, Rosendale, Wis.

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Mr. Faville—I would like to ask Mr. Kingman how he knows that the rigid stanchion is not a good thing for the cow? And before he answers it I am ready to admit that theoretically they are a very bad thing; but practically they are not near as bad as they are in theory, in my judgment. I want to know if he knows it from trying the same cow in both loose and rigid stanchions?

Mr. Kingman—The first question is how I know it. I know it from practice; and I know the bad results of it from practice. I feel to-day as though a man ought to be indicted and sent up for thirty days on bread and water, that will put dairy cows in rigid stanchions. I practiced it a number of years. I guess I ought to be sent up. I feel guilty.

President Parkinson—The statute of limitations has probably run in your case.

(Laughter.)

Mr. Kingman—I hope so. I have seen my cows stand for hours and moan, and dare not lie down. When down and a little out of position, it was difficult for them to get up. And they would lie until necessity for food compelled them to get up. I have had cows in my herd with bunches the size of your fist caused by cramped knee in the stanchion. They were the easiest I could possibly make for rigid stanchions. When I put them into a different kind of stanchion, where they had ease and comfort I noticed we got a pailful of milk more a day, or at each milking, from 30 cows; the same kind of feed and stanchions identically in the same place. I know it by experience.

Mr. Arnold—How are your cattle kept now?

Mr. Kingman—In what is called the Bidwell tie. The cows are not tied at all. They have perfect freedom; can lick themselves, get up and down as if out in the pasture under a tree. The stall is so arranged that they are kept perfectly clean. I think you would regard them as clean as cows that come in from the field in the summer time, in August we will say.

Mr. Stiles—Is that by having a slat floor?

Mr. Kingman—No, sir; tight floor; but inclined an inch and a half in seven feet. With the Bidwell tie they are

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not fastened at all by the head. What keeps them in their place is a chain that runs behind them; the same as you have often seen in livery barns where they stretch a rope back of the horses to prevent them backing out.

Mr. Stiles—How much more space does it take?

Mr. Kingman—My old stanchions were two feet ten inches. These are three feet exactly, from center to center. If I was going to build my stalls over again, for the size cows I have, I would make the stalls two feet ten, the same as they were in the stanchion. Then I would get just as many cattle in.

Mr. Faville—You told us what your morning, noon and evening ration would be. I want to know if you think it is necessary to feed cows more than twice a day?

Mr. Kingman—No, not necessarily, but my cows are much more quiet and contented if they have a little something to pick over, if it is nothing more than a little straw, which I could throw before them in the stable, or in the yard if it is pleasant weather. My cows are out of the stable from eleven until one or two in warm weather.

Mr. Faville—Don't you water more than once a day?

Mr. Kingman—They have access to water only once a day. I don't water until eleven and then they get all they want. I don't know whether that is the proper way to do it or not. I have only one man to take care of all my work. If I thought it was necessary I should certainly find time to turn them out in the morning when it is pretty crisp, but my practice has been to water once a day; turn them out from ten or eleven until two or three.

The President—Do you regard yard exercise as essential?

Mr. Kingman—I do not. Still I would like to have my cows have a little bit of exercise; about as much as they get in going out into the yard and getting their water and back again. If I had a different tie I should think it more imperative to have them exercise. While they can't get much exercise in the stall, they are perfectly free and perfectly easy.

Mr. Faville—Is that tie patented?

Mr. Kingman—Yes, sir. They cost 50 cents a stall.

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Mr. Faville—This question of fastening a cow is a very important one. I have no doubt more than two-thirds of the cows in Wisconsin are fastened in rigid stanchions; and if there is such a loss as that people ought to know it.

Mr. Stiles—How much difference did you make in the amount of milk?

Mr. Kingman—After taking them out of the rigid stanchions and putting them in these stanchions the increased quantity of milk was about a ten-quart pail full at a milking.

Mr. Faville—About one-third of a quart to a cow?

Mr. Kingman—Yes. That would be at each milking; twice a day would be twenty quarts.

Mr. Brown—While warming the water, why not warm it above sixty?

Mr. Kingman—If you warm it up to sixty or sixty-five, I regard that warm enough for the cattle to drink with pleasure.

Mr. Brown—The cow will warm it more than that when she gets hold of it.

Mr. Kingman—Yes, of course it has got to go up to blood heat.

Mr. Arnold—Do you believe that the cow enjoys drinking warm water as well as she would water that had never been heated?

Mr. Kingman—I don't know why they shouldn't. As I said before I don't warm it up to more than 65 degrees; and certainly my cows drink freely of it and all they want.

Mr. Arnold—If you was going to drink water would you like to have it warmed for you on all occasions?

Mr. Kingman—Not on all occasions. I don't drink ice water in the winter time myself, especially if I am going out doors.

Mr. Arnold—Well, I don't believe in having cattle drink ice-water, but I believe that water loses its vital quality by warming. You have got an artesian well. If you gave them the water direct from the artesian well what would be the temperature?

Mr. Kingman—It would be 48.

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Mr. Arnold—I think they would be better off.

Mr. Kingman—I don't know how they can be better off than they are.

Mr. Arnold—I notice there isn't half as much talk about warming water as there has been. I don't know what the effect would be upon water at a lower temperature, but water that has been boiled is very different from water that has not been boiled.

Mr. Stiles—Your artesian well doesn't run fast enough, does it?

Mr. Kingman—Yes, to supply the cattle. But I conduct it quite a long ways, as much as ten rods, in pipes under ground; then it runs into a tank, and standing in the tank it would get chilly. It has been known to freeze over. After my man builds the fire he warms up the water to a proper degree for the cattle to drink. The principle is this, in relation to cattle drinking: The water that a cow takes into her stomach has got to be warmed up to the temperature of the body before it can be digested; and if the cow has to warm it up in her stomach she has to do it at the expense of the food given her; and as I said in my paper, I can do that heating up better with wood and coal than I can with hay and grain.

Mr. Arnold—If that is strictly true you would want to heat your water up to 98.

Mr. Kingman—If I heat it part way up there it is a great help.

Mr. Stiles—You wouldn't warm it in the summer?

Mr. Kingman—No, sir.

Mr. Stiles—It is heated up to the same degree in May or the first of June.

Mr. Kingman—If the experimenters and chemists will tell me it is necessary to warm it up to blood heat, I will do it; but I have come as near there as my judgment teaches me I ought to come. There is quite a difference in drinking water at 60 and 65 and water at nearly 32.

Mr. Arnold - I have no doubt you are correct in what you say and approve of it; but the trouble is in these conventions they always go to the extreme. They will take your

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assertion that water has got to be warmed anyhow. I don't believe in it. If it comes right out of the ground that is warm enough.

Mr. Kingman—I said I warmed up to 60 or 65 degrees. I will say in addition that if it was well water, which is ordinarily about 50 degrees, if it was taken fresh from the well, I don't think I would go to the expense of putting in a tank to heat it.

Mr. Stiles—You think it would be better, though?

Mr. Kingman—I should raise it a little above that, ten or fifteen degrees; get it as near the temperature of the body as you can, or approaching the temperature of the body.

Mr. Coleman—Is there any difference whether the stable floor is dirt or plank as far as the health and comfort of the cow is concerned? I have noticed that some dairymen claim that if a cow is standing on the floor she is liable to back up into the manure and that it is better to arrange the floor lower so that she wont step back into the trough.

Mr. Kingman—I don't think it would make very much difference whether the floor was dirt or plank if you kept your cows as heavily bedded as I do. I bed them in order to keep them clean. As to the question as to whether it would be better to stand on the ground or on plank there would be no objection to standing either on plank or on the ground.

Mr. Bell—Do you use a drop behind the cow?

Mr Kingman--Yes.

Mr. Bell—With your stall I supposed you did.

Mr. Kingman—The seven feet takes in manger and all.

Mr. Arnold—What is the cost of the Bidwell tie?

Mr. Kingman—Mr. Bidwell will put them in all ready to set up at $2.50 or $3.00 or $4.00 or $5.00, or veneer them or gild them or anything you want. The principle is always the same. If he should send you a tie at $2.50 the tie and the partitions would be of rough boards. Mine cost $4.50 after paying the royalty. Everything is planed and sized, matched and painted with chains behind the cows; and instead of pickets of wood in front I use iron rods running

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down, so I can look through the front of the manger. I put in little half inch rods of iron.

Mr. Arnold—Isn't this chain which runs behind the cows a little in the way of the milker?

Mr. Kingman—Not at all.

Mr. Arnold—How high up do you have it?

Mr. Kingman—It comes just above the gambrels of the cow; and is not straight across but drops a little.

Mr. Faville—How do you get under there?

Mr. Kingman—We don't have to get under.

Mr. Faville—Do you milk from behind?

Mr. Kingman—I don't keep goats; I keep cows. If I had goats I would milk them from behind; but inasmuch as I have got cows I milk in the regular way.

Mr. Faville—I don't believe he milks at all. (Laughter.)

Mr. Kingman—Mr. Faville is right. I haven't milked a cow in years. But I want to tell him that there is not a day nor scarcely a milking but what I am there and see to it. I do all my work by proxy now. If I could describe briefly here—

Mr. Faville—That is what we want you to do.

Mr. Kingman—I am not advertising Mr. Bidwell. If you want to see the ties you will find them over to the University farm. There you will see them in good shape because Mr. Bidwell himself put them up. There are two partitions three feet apart like this (indicating). The cow comes in to the rear of these, and in front there is a feed box and everythidg necessary for feeding. On the near side, the side you milk on, there is a hinged door and it swings around like that (indicating). Now when the milker comes he lifts a latch and opens this door against the cow that stands on this side and he steps in here. It gives him an abundance of room to milk. If this was only three feet apart it would be too close to milk in. You couldn't get in there to milk, but swinging that door around against the cow behind where you are going to milk it keeps her from crowding onto you and she can't switch with her tail. Here (indicating) is the post that

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this fastens against when shut and the cow that is being milked can't switch you with her tail because she strikes this post. When you are done milking you shut this door and she has plenty of room to lie down or get up or lick herself or anything she pleases. The manger and feed-box is all adjusted in one piece, and there is a lock so arranged that in half a minute you can shove it in against the cow and make the stall shorter, or put it out into the alley and make the stall longer. If it is a short cow you can make a short stall, if a long cow you can make a long stall, and keep the cow back to the drop.

Mr. Stiles—It seems to me I have cows that wouldn't stay in there a minute; if put in they would back right out. I don't know, but that is my idea.

Mr. Kingman—I have had cows in there two years, and I never had any bad luck in the stalls; never had one get out, or turn around, or anything go wrong with the stable. If you have a large cow you would need to give her three feet two or three inches; but with my cows two foot ten would do. Three feet is plenty room, and they can't turn around or get loose.

Mr. Faville—You have been talking about a door and a chain both; which do you mean ?

Mr. Kingman—The door is a part of the partition between the cows; and the rope or chain is what is stretched across from one post to the other right back of the cow.

Mr. Faville—To keep the cow from backing out.

Mr. Stiles—When you swing open the door it doesn't have any effect on the chain ?

Mr. Kingman—No, the chain is on the post. You open the door and swing it back against the cow behind it.

Here is a chain that runs behind the cows. I take it off from the post on the right hand side and bring it up and hook it onto the hook in the door and then the chain and the door all swing together. Then when I turn my cows out I commence at one end, open the door and the first cow goes out; swing another door and the next cow goes out; and just as fast as you can lift a latch the cows will walk out; and when the doors are all swung open they

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fall back and lap onto one another like that (indicating) up against the manger. Now your platform is all clear. You can go on and shake up your bedding and clean out what is necessary, put on new bedding, swing the doors back to their places and hasp them as you go along and your stalls are ready for the cows to come in at night.

Mr. Stiles—If you had a watering arrangement in front, where would you put that?

Mr. Kingman—I think there is room at one end of the manger to put in a watering box.

Mr. Rawson—Do you have any trouble feeding hay in those mangers?

Mr. Kingman—There is plenty of room. I thought at first there would be that objection, but I find there is ample room. I never wasted so little hay as I did last winter and the winter before.

Mr. Rawson—I have at present the swinging stanchion. Would you advise me to discard that and put in this Bidwell tie in its place?

Mr. Kingman—The swing stanchion is a decided improvement on the rigid stanchion. Of course every one will consult their own means; but if you want the best thing, the swing stanchion is not the best.

Mr. Rawson—One objection I have to the swing stanchion is that the cows have too much freedom; the stronger cows will push the weaker ones clear around.

Mr. Kingman—I have had some difficulty; had teats cut off; a cow lying down and the cow next to her step with the end of the hoof and take the end of the teat off.

Mr. Rawson—I have had several cows lose teats and I laid it to that.

Mr. Coleman—We keep our cows in two or three and even four weeks at a time this weather and I would like to know whether it is best to have a dirt floor where you are going to keep your cows in all winter.

Mr. Kingman—Do you give your cows bedding?

Mr. Coleman—Yes, sir.

Mr. Kingman—If you use bedding as freely as I do I could see no difference whether you use a dirt floor or a plank floor.

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Mr. L. H. Adams—I would like to have you advise these friends here that if they will come out to the experiment station Adams will spend the day with them in showing them that stall.

Mr. Kingman—It would pay any of you dairymen who want the best thing in the shape of a cow tie to go over there and see those stalls. I would like to ask Mr. Adams how he likes them.

Mr. Adams—I think you have not said anything so far but what is borne out in our own experience.

Mr. Kingman—I think they will please everybody. I don't see how they could do otherwise, because they answer every purpose, and come as near the perfect thing as any method of tying I have ever seen or heard of.

Mr. Stiles—The manger you were speaking of, is that part of the stanchion?

Mr. Kingman—The manger and feed box are all one. It occupies the whole of the front space. This moves back or out just as you want it, and I can move it in a minute.

Mr. Stiles—They stay where you put them?

Mr. Kingman—Yes. The cow can't unlock them. It is rather an ingenious device.

Mr. Rowlands—How deep do you have your drops behind?

Mr. Kingman—The drops are six inches and eighteen inches wide. Under these drops I nave a cemented drain that is inclined that carries all the liquids from these drops. The bottom of the drop is not put in so tight but what the liquids run through into the cemented drain below that runs from one end of the barn into a cistern and from the other side into the cistern.

Mr. Faville—I want to say in regard to this paper that I regard it as pure dairy gospel, fully up to the times. All he says about kindness to the cow, and feeding the cow and everything of that kind, these young chaps would do right well to heed. He has learned it by experience, and so did I, that it pays in dollars and cents to give the cow the nicest care possible, and you must be sure to feed her well. You can't cheat a cow. You may cheat your

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neighbors in trading horses, and lie to the butcher and the grocery man, but you can't cheat a cow. She is going to take her support out of what you give her first, and if there is anything left she will give you something back; if there ain't you won't get anything.

Mr. Kingman—One word more in relation to this stanchion. Mr. Bidwell suggested it and another man that came there suggested it, but I have no use for it. This chain that runs behind here, if you have a kicking cow you can put it back of one leg and forward of the other, so that she can't draw her foot forward. It is no use to me. I haven't had a kicking cow in my stable for fifteen years. I have had heifers when I broke them that would slash around a little, but in two or three days they were just like the old cows. With a great many people that would be something of an object. A great many keep a kicking strap in the stable when milking, but the best use a dairyman could make of such a kicking strap would be to put it onto the milker.

The President—Mr. Kingman, I don't desire to go into your private business, but what do you regard as a fair net profit per cow in a fairly well conducted dairy?

Mr. Kingman—In my own case I am not satisfied unless my cows pay me $100 net profit for the milk product. They didn't come quite up to it last year and I don't know as they will this year.

The President—Do you mean net or gross profit?

Mr. Kingman—Gross profit I mean. Last year it was $85.15 for the milk product alone, not including anything which I used in my family, not including anything we gave away, and we gave a good deal of cream to the villagers for festivals and such like occasions. I don't take anything into account for the skim-milk or buttermilk or progeny.

Mr. Faville—Do you make your butter at home?

Mr. Kingman—Yes, sir.

Mr. Arnold—Can you tell what the net profits are?

Mr. Kingman—The keep of my cows for the year will come somewhere between $35 and $40.

Mr. Faville—Do you mean for the feed, or feed and care?

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Mr. Kingman—For feed and pasture. That don't take in the care.

Mr. Arnold—What do you get for your butter?

Mr. Kingman—My butter is contracted in the summer from the first of November until the first of May for thirty cents, and from the first of May to the first of November twenty-five cents. That is net at the express office; they pay their own express. In pounds I can't tell exactly how much the average is, because we sell a good deal in the village; that is, cream to the ice-cream men, and to the neighbors for parties and the like. There are quite a number who buy their milk of us; and the amount of product that I sold in this way at the house was $46 and some cents last year.

Mr. Stiles—What breed of cattle do you use?

Mr. Kingman—My cows are Jerseys.

Mr. Stiles—Full blood?

Mr. Kingman—All registered, yes sir.

Mr. Stiles—What method do you use to get your cream?

Mr. Kingman—The gravity system, cooling system.

Mr. Stiles—How much do you get for your cream?

Mr. Kingman—I sell for eighty cents a gallon at home. They come to the house after it.

Mr. Stiles—How much do you lose in your skim milk.

Mr. Kingman—From 2-10 to 5 or 6-10 of one per cent. I am losing probably a dollar a day from the gravity system. I don't think there is any gravity system that will recover all of the butter fat.

Mr. Faville—Why don't you get a separator?

Mr. Kingman—I am going to.

Mr. Youmans—I would like to know how long you let your milk set?

Mr. Kingman—Before I skim?

Mr. Youmans—Yes.

Mr. Kingman—I have plenty of room in my tank, and I skim once in twenty-four hours. Let it stand twenty-four hours.

Mr. Youmans—Use ice in the summer?

Mr. Kingman—In the summer yes; in the winter not.

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Mr. Arnold—What is the average test of your cattle?

Mr. Kingman—The average last month was 5 8-10 per cent., heifers and all. They run between four and five up to almost 7 8-10 per cent.

Mr. Stiles—You mean the oil test?

Mr. Kingman—The butter fat test. If you keep the milk cool in the cans, as cool as 45 degrees, you can recover all the fat that you will get by a longer setting, and recover it in six hours. There is no necessity for letting your milk stand over twelve hours, from one milking to the other.

Miss. Peffer—If it stands a short time won't it measure more in quantity?

Mr. Kingman—Yes; but if you let it stand twenty-four hours you get better separation.

The President—The next subject is "Our Dairy Products," by John W. Decker.

OUR DAIRY PRODUCTS.

PROF. J. W. DECKER.

The dairy cow has been discussed at length and her product now comes before us for consideration. The product is the cow's milk in its various forms, but we cannot stop to consider all of the forms in which it occurs. We will look at it under two general heads.

I. The losses to the farmers through unnecessary waste.

II. The products as offered for sale on the markets.

The Wisconsin Dairymen's Association has been doing great good among factorymen by the system of education through instructors. Great wastes have been stopped, and the money saved and gained amounts to thousands of dollars annually, but there are farmers who do a different class of dairying whose losses amount to thousands of dollars. They are the ones who are making butter at home or are selling their cream to gathered cream butter factories. Through different ways I have secured samples of the skim milk from this class of farmers, and the losses of butter fat

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are amazing. Through recent tests made at farmers' institutes this fact was so impressed upon me that I cannot fail to speak of it now.

Such milk seldom tests below six or eight-tenths of one per cent. of butter fat, and quite often goes over one and a half per cent. This comes from the improper and careless means of creaming. The cream cans are usually set in water that is not cold enough. The best results are obtained only by using ice, and as few farmers have ice the results I have mentioned must necessarily follow. By carelessness in skimming, even with ice, the best results are not obtained.

Suppose a farmer has two hundred and fifty pounds of milk a day as the product from his herd. Two hundred pounds of this will be skim-milk. If he loses one and a half per cent of fat in the skim-milk he will be losing over three pounds of butter per day. Three pounds of butter a day for a week is twenty-one pounds, at twenty-five cents, is five dollars and a quarter. How long can our farmers afford to lose five dollars a week?

Now with a hand separator this great loss of butter in the skim milk can be saved. A cow that produces a pound of butter a day is a good cow, but this machine that will cost about the same as three good cows will save as much butter, as the three cows would produce and has the advantage over them in the fact that the machine does not eat anything. I am an advocate of the hand separator for farmers who make up their milk into butter, or send their cream to gathered cream factories. Proprietors of such factories say that they not only get more cream from the same herds but are able to make more butter out of the same amount of cream.

The hand separator is rapidly coming into use in our state but I want to see its use hastened. But the loss of butter fat is not the only unnecessary waste occuring among Wisconsin Dairymen.

You will remember that the product of the cow is milk in its various forms. Butter fat is not the only constituent of milk. There are also skim milk and whey that are valua-

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ble by products. The skim milk at a great many creameries is taken home sweet and fed before it has a chance to sour, but not so with the whey at our cheese factories.

If the farmer buys corn, oats, or bran, he pays good hard money for it. Sweet whey can be made to take their place to a certain extent, and is worth about eight cents a hundred, that is what he will get for his whey in good hard money when sold through his hogs just the same as for his corn, oats or bran. But sour, rotten whey is not good for much, and that is just the stuff the patrons fight for at most of our cheese factories.

The whey tank should be cleaned out every day and when the whey is run into it, steam should be turned on and the whey scalded to one hundred and sixty degrees F. That will kill the germs that cause fermentation and the whey will remain sweet and be worth money. So much for unnecessary wastes and losses of Wisconsin dairymen. The old maxim of "a penny saved is a penny earned," comes in here; and I believe that the losses should be carefully looked to, and they will prove thousands dollars earned.

We now come to the second division of our subject: The products as we find them on the markets.

Butter fat is the most valuable part of the milk for it is what determines the amount of butter we get, and also the amount and quality of our cheese. The process of butter making is much simpler than that of cheese making, and the factory butter we usually find on our markets is generally of good quality. What do we find, however, on our markets in the way of cheese? Well, a good housewife goes to the store and buys some cheese. The family eat a little of it with their pie. It is a tough, leathery curd without much taste and hard to digest. They decide that cheese isn't very healthy and it don't agree with them, and they don't like it very well, anyway. They then call for a soft cheese. What I believe they are looking for is a rich creamy cheese that will dissolve in the mouth and leave a pleasant taste. What they are getting is a half ripe curd that may be a full cream or it may be one of those partially skimmed

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Wisconsin cheese that is said to be nearly or quite as good as full cream. That is what may be found on Wisconsin markets, but outside of our state these cheese have a chance to develop. It is surprising how fast they will develop from skims or so-called standards into full creams.

The less fat there is in a cheese the tougher it is, and it is sometimes necessary to cut it with an ax. It is like bass-wood, and I know you do not like bass-wood chips as an article of diet; neither do other people.

The butter fat determines the value of the cheese. The more butter fat there is in the cheese, other things being equal, the better it will be. The butter fat makes the cheese more waxy. Cheese makers try to put more moisture in the cheese by leaving whey in the curd, and thereby give it the appearance of a creamy cheese. But the result is a cheese of inferior quality, perhaps pasty, and will not hold its flavor because the casein will not take up the moisture properly.

A prominent cheese buyer writes me that he has tested a great many standard factories, and has not found one up to the standard, (thirty per cent. fat). Standards test twenty to twenty-five per cent. fat. Full creams test thirty-three to thirty-five, and only one up to forty per cent. This, mind you, was done in the fall of the year, when the milk is very rich, and makers are afraid of getting their cheese too rich. A cheese containing forty per cent. of fat is a very nice cheese, but I would rather have one containing fifty per cent. fat. To make such a cheese requires something like six per cent. fat in the milk. When I say I like a fifty per cent. fat cheese, I am speaking of myself as an individual, but I believe there are a great many other people who would like just what I like. But if our full cream cheese test only thirty-three to thirty five per cent. fat let us get them up to forty per cent. fat first.

Some people would have you believe that it is impossible to incorporate the fat in the cheese after you get above a certain per cent. of fat in the milk. There is, to be sure, a greater per cent. of fat in the whey from richer milk, but there would be a loss of fat in the whey if there was only

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one per cent. of fat in the milk. The fat lost in the whey is not as great a percentage of the total fat present in richer milk as in poor milk.

A cheese may contain fifty per cent. of fat and still be a poor cheese. The butter fat is only one factor; another factor that goes to make up at least half of the cheese is its flavor. If the flavor is bad, the butter fat will not help it out.

I spoke of the tough, leathery full cream cheese that we get at the stores. It is sold before it has a chance to ripen.

The ripening of cheese is a digestive process, whereby the casein is broken down into soluble peptones. I believe the fat hastens and modifies this action, so that we get a cheese that has a mild, rich flavor and will dissolve in the the mouth. The fat helps to hold more moisture and hold it properly The cheese does not dry out so fast. The trouble with the poorly ripened cheese is, I believe, because the farmers are in a hurry for their money; they have poor curing rooms where they could not keep the cheese if they should want to, and when the cheese is sold to the middle man, it goes into cold storage where it does not get a chance to ripen.

I believe our people ought to let cheese take the place, in a great measure, of the meat they eat, for I believe it to be a cheaper food. We ought to encourage this by putting the right article onto the market.

Wisconsin stands well to the front, but she must look well to her laurels in the kind of an article that is being sold for Wisconsin full cream cheese.

DISCUSSION.

The President—The paper is before the convention.

Mr. Faville—Where can we find some good cheese; some that is fit to eat?

Mr. Decker—Perhaps you can find some at the stores in Madison.

Mr. Faville—Do you say you can find some at the stores?

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Mr. Decker—I think so. They have had some good.

Mr. Faville—Tell me where.

Mr. Decker—At McConnell's.

Mr. Faville—I have been to many of them and haven't been able to find any good yet. You may say that Wisconsin cheese stands to the front. I am sorry for that, if Wisconsin cheese is the best there is. I have tasted a good bit of it. I would like to get some to eat, but I can't get any fit to eat. I have worn my boots out pretty near tramping around Madison.

Mr. Stiles—Don't you know the reason?

Mr. Faville—No; I suppose it is because it isn't made.

Mr. Stiles—You will find that most of the cheese is made for the English market, and it is not intended to ripen in 30 or 45 days.

Mr. Decker—There is a small proportion of Wisconsin cheese that finds its way into England, I guess.

Mr. Stiles—Do you think you can make a first-class cheese and put it on the market in two to three months?

Mr. Decker—The cheese that takes time to cure is the best kind of cheese; as to two months, I would rather have it six months or a year.

Mr. Faville—If Wisconsin would cater to the cheese eating public, they might sell all the cheese they make at home.

Mr. Stiles—Can you make a good cheese and sell it in sixty days?

Mr. Decker—You can't cure a cheese down properly in three weeks.

Mr. Kingman—I am very sorry that the cheese makers in Wisconsin are not making better cheese and keeping up the reputation of the state as a dairy state. It seems to me that the cheese makers are at fault. I don't know how to make cheese, but I do appreciate it when I get some that is good.

Mr. Stiles—Are not the patrons of the factory to blame? Until they are willing to make good cheese and keep it a little while, have it all full cream and store it until it is

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cured, we can't expect good cheese. They want the dividends too quick.

Mr. Decker—Now about pushing cheese onto the market: very often cheese are off-flavor, and the cheese makers will fool the buyer and get it onto the market early so that he does not detect the flavor; but when the cheese cures down it hasn't the very best flavor. That is one reason you can't keep it. If you go back to the beginning of it it is because there is dirt somewhere, either with the farmer or the cheese maker; and that point I mentioned, about cleaning out the whey tanks every day. There are hundreds of whey tanks which stand from one end of the year to the other without being cleaned out; and farmers pump that stuff into their cans and the germs and dirt get into the milk and make it off flavor. And cows being milked near a swill barrel or manure heap, the milk gets full of germs and the fermentation gives the cheese an off flavor.

Mr. Faville—Brother Decker has just let the cat out of the bag. It is that kind of a cheese they put onto the market for us fellows to eat. They let us have that kind of cheese to eat, and that is about all we get. I used to make cheese myself, and have shipped cheese to New York. I never let cheese of that kind go onto the market. The way to do with that kind of cheese is this: Don't ruin your home market with it, but sell it as inferior cheese; send it to your commission man and tell him to sell it for what he can get. In the city there is always a market for that kind of truck. Truck men go around and peddle cheap cheese and poor butter. People that want it get it at a very low price. Don't spoil the home market with it, and the reputation of the factory and all concerned, and make us fellows mad besides.

Agricultural Student—I would like to ask the gentleman if there is anything more concerned in it than the dirt?

Mr. Decker—It may be something fed to the cows. In 99 cases out of 100 it is the dirt. If everything connected with the dairy is kept clean they get nice milk.

Student—Would you recommend keeping the cans covered up in the summer time?

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Mr. Decker—No, I think it ought to be taken to a good clean place, aired carefully and cooled down. It depends on what the temperature of the air is. The process of cheese making is the process of fermentation. You have got to develop acid before you can make cheese. It shouldn't be too sweet; and on the other hand, not too sour. If propery aired, and the proper germs get a start it will be all right; but if aired near a swill barrel it will get the wrong kind of fermentation. If cows go through a marsh and get the udder covered over with dirt it ought to be brushed off; and the milker's hands ought to be washed.

Mr. Rowlands—What do you consider good skimming, set in cold water?

Mr. Decker—Good skimming ought to be done below 1-10 per cent. Where they have no ice 8-10 to 1 per cent. is the usual thing.

Mr. Rowlands—I get about 4.

Mr. Decker—That is doing very well, but that is 3½ more than you ought to lose.

The President—We will listen to a paper upon "Wisconsin's Dairy Exhibit at the Columbian Exposition."

WISCONSIN'S DAIRY EXHIBIT AT THE COLUMBIAN EXPOSITION.

D. W. CURTIS, Fort Atkinson, Wisconsin.

At the annual meeting of the Wisconsin Dairymen's Association, held in Oshkosh last February, a committee, consisting of D. W. Curtis, Hon. B. E. Sampson and H. S. Weeks, was appointed and empowered by the State Board of World's Fair Managers for Wisconsin to arrange for an exhibit of butter and cheese at the Columbian Exposition. The Board recognized the great dairy industry of the State, and set aside a sufficient amount of the funds at their command to commence the work.

Work did not begin until the middle of September, the object being, at that time, to secure an exhibition of cheese

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made in 1892, to be known as the Wisconsin State Exhibit, and to be ready at the opening of the Exposition, May 1st. 1893. Mr. R. B. Kirkland, the Executive Commissioner, had managed to secure space for this public exhibition, it being the intention to show openly all kinds of cheese made in this state, that the world might see what was produced in Wisconsin. Visits were made to different dairy sections, and circulars sent out soliciting contributions of cheese for this exhibit. In this branch of the work we have met with most encouraging success. Between three and four hundred cheese were promised, including all the varieties of this product manufactured in the different sections of the state. Undoubtedly, before spring arrives, some and perhaps many of the promised cheeses will have found their way to the grocer, or executed a successful case of "mysterious disappearance" in other directions.

Owing to the great demand for space for dairy exhibits from every state and nation in which the product of the dairy forms a staple article of commerce, it was deemed necessary by the Columbian Exposition to have four different exhibitions, that each and every one might have an opportunity to exhibit. Should the space assigned to Wisconsin be ample for every one to make four exhibitions, they will be allowed to do so; otherwise, they must be content with less.

Dairy products will be received only from the first to the tenth of the months of June, July, September and October. They will be kept on exhibition for the month in which they are entered, after which fresh exhibits must replace them, and they will be sold or disposed of in accordance with the wishes of the exhibitor.

It is possible that the "Wisconsin State Exhibit" will be replaced or renewed each month, depending upon the temperature, care being taken that it is not kept too long and thus injuring its sale. As an inducement to the cheese makers of Wisconsin to contribute cheese for the state exhibit the Dairymen's association offers premiums amounting to $150 for the first exhibit, and it is more than proba-

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ble that these premiums will be duplicated for each of the three following exhibitions.

The exhibition of butter and cheese for awards by the Columbian Exposition will not commence until the month of June. Present indications assure us that with a continuance of proper encouragement and assistance, the dairymen of Wisconsin will do their part toward making an exhibit of which the state will have no occasion to be ashamed.

The importance to Wisconsin of having her dairy interests well represented at the World's Fair cannot be overestimated. Every foreign nation, whose dairy industry is promoted by the success of its dairy farming, sees the importance of an exhibit, and has made application for space. Canada will make an immense display of her cheese products. They have already made a cheese for the World's Fair that is six feet thick and nine feet in diameter. Wisconsin must make a larger one, and steps in that direction have already been taken. New York has a fund of ten thousand dollars set aside to promote the exhibition of her dairy products, which sum will be increased. Illinois is asking for twenty thousand dollars to properly represent her dairy industry. This is an indication of the interest shown by other states, and the importance attached to making a grand exhibition of their dairy products.

As Badgers, we have a just pride in believing that we make the best butter and cheese to be found, and our modesty will hardly keep us from telling the truth when approached on this subject. The state will never have a more favorable opportunity to show her dairy products to all the nations of the world than at the present time. Repeated efforts will be made to have every private dairyman, creamery and cheese factory strive for an award at the Columbian Exposition.

The estimated value of Wisconsin's dairy products for the last year was $28,000,000. This industry is growing rapidly in all parts of the state. At the present rate of increase, in less than ten years our dairy products will

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amount to more than $50,000,000. New customers must be found for this large production.

The wonderful strides that dairy husbandry has made in Wisconsin in the past twenty years; the fact that it is the most remunerative of any branch of farming, and the further fact that a great number of our farmers are about to enter upon it, all these call for a statesmanlike measurements of its necessities. To provide for the interest as it now stands and its assured future, new markets must be opened, and nothing will help in this matter so greatly as that Wisconsin shall make a full and striking exhibit of her dairy products to the whole world. Nothing should be left undone in placing one of the leading industries of the state on exhibition to such an advantage as shall clearly demonstrate the superiority of our make and secure for Wisconsin, from the world at large, an appreciatory estimation of her facilities and ability to furnish a high grade of butter and cheese.

The President—This will conclude this afternoon's session. Tonight we will take up the session that was appointed for tomorrow morning. We have thought better to have a session here this evening, in which the question of the comparative profits of sheep and swine industry will be discussed by Prof. Craig, Mr. Johnson and others. That will give those who remain over tomorrow an opportunity to visit the university and the experimental station if they desire. The session here this evening will conclude the work of the convention. We will now stand adjourned until half past seven.

EVENING SESSION.

THURSDAY, February 9th, 1893.

The President—The convention will be in order, and we will listen to a talk by Mr. Johnson on hogs.

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HOGS.

W. N. JOHNSON.

Gentlemen, take off your hats; we are talking about the hog worth $8.65 in Chicago. When we commence with the hog we have to begin with him before he is born; so we will commence with the brood sow. In these days when hogs are worth the money that they are we should be, if we haven't been before, very careful in picking out the brood sows; not taking everything and anything because we can get it cheap. No man can invest his money better, in starting out in the hog business, than in getting the very best sires and dams. I don't believe in getting merely the handsomest hogs. It is not always the handsomest sow, in fact very seldom the handsomest sow, that is the best breeder. As a general thing a sow that is quite coarse in her make-up, but has good points, that is kind to start with and gentle, and one that will allow you to handle her is the best. You want a sow that is long and deep and has good width on the thighs and has a good back. I like to have a sow held her ears up pretty well, so that she can see well, and I like at the same time to be sure that she is not deaf. If you buy an old sow and she shows signs when you come around her of not noticing little things, when the pigs come she will lie on them and she will not hear them, and crush out their life before they can do anything for themselves. When a sow shows that sign, don't buy her; if you have her, you better fatten her.

Again, in picking out a sow you want one that shows well as a milker. Look her over and see if she hasn't any false teats at each end, or as few as possible. A large sized sow should have twelve teats, and of those twelve at least ten should be perfect, otherwise reject her entirely. The teats should be in good shape. If she has bred before, and you know she has raised pigs, and is perfect in that way, so much the better. Now when you get this sow, a large rather loose, well framed deep sow, with a good showing for giving milk, then you want to pick out your sire. I

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like to have a long hog, and a hog that has big hams. I don't care so much about the front end, but I want good big hams on them. Nine out of ten of those selling breeding hogs will show you the front end, and never take you to the back end. You have got to hunt them up for yourselves. I want a hog that is good at both ends.

Now when you have got these hogs you want to take good care of both of them. The boar should have plenty of room were he can run around. I think with our way of shipping hogs, live weight, it is very important to have good limbs on our hogs. I want my hogs to be able to carry three or four or five hundred pounds of meat, and stand up and walk off with it. If you keep a boar until two years old—and I wouldn't get rid of him before that time if doing well, and not related to your sow—and he gets heavy and his hind legs give out, he is no good on earth, and his pigs legs will be bow shined and crooked. So be sure and get a hog that is well muscled up, as you would pick out a horse. If your boar has had a good range to run in, which gives him a good action, he is ready for business. Don't feed either the boar or the sow too high. Give her plenty of room. I have never had any trouble with the hog cholera or anything of that kind. We allow our sows almost the liberties of the place, that is during the time they are running around and getting ready to have pigs. We will breed those sows to have early pigs; in the middle of March say to the last of March we like to have our farrows come, and during the winter we allow these sows a full run.

If fattening hogs, and there is anything left in the trough, we throw it out to them; if we are feeding rutabagas, or roots at all, we give the brood sows their share. They have a little clover hay and they will eat it as well as the sheep if it is good. We don't make a business of feeding them any corn unless they get it by picking up around the cattle after they have been fed corn. We are sure that our sows are in good thrifty condition and strong, so they will carry their pigs and have plenty of room not only for their pigs, but enough so that their pigs will be strong when they come. These sows we don't put

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up into a pen of any kind until about two weeks before they are expected to farrow. We mark down the time they are due to farrow carefully, because we know you can rely on sows farrowing to a day. You can come within half a day or a few hours sometimes. I remember that two of my sows were bred within an hour of each other and they farrowed within an hour of each other. As those sows dropped their pigs right in the middle of winter I had to do something extra. I took the hay knife and cut some out from the straw stack and allowed one to farrow in the straw pile, hanging a blanket up in front. The other sow I put on a board floor. The one having the ground under her and the stack over her had a splendid litter and did remarkably well. The one on the floor didn't do as well. I never had success with sows on the floor. If I can't have a pavement under them to prevent their rooting, I rather have them right on the ground. If I can get flagstones handy I would rather have a flagstone bottom. I know it is secure against rooting and easy to keep clean. If you can't get them, a floor of large sized cobble stones might do just as well.

A pen in which you are going to have pigs wants to be as sweet and clean as possible; with plenty of room so the little fellows can wrestle around and not get the thumps. This we have to work against early in the spring, when we can't turn them out. The way to get over that is, as soon as possible, if the sun comes out a little bit, to open one side of the pen and get the pigs out and give them exercise. Exercise will knock the thumps right out. After you get these little pigs started feed your sow for milk, as you would feed a dairy cow. The way we feed is to grind barley up nice and fine, and mix it with shorts; and if we have milk we mix it with it; and it isn't very long after you feed this slop before the old lady will coax the pigs up, and they will get a good deal themselves. To prevent the old sow from eating her pigs we feed roots. You must feed green food of some kind to overcome the inordinate appetite they have for meat, and I don't think it does any harm when the sow is suckling pigs to throw in some bones to

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to let her chew. I had a sow a few years ago that started to eat her pigs, and as I had killed a beef I gave her the head, and turned her out of the pen, and kept her away from the pigs 10 or 12 hours. She chewed at the head; it seemed to be something she needed. I gave her a little charcoal, and turned her back, and she never offered to touch another pig. She had eaten up three out of nine before she was taken out. I know that sow hadn't had as many roots as she should have had beforehand.

We all know that it is very seldom that a sow will eat her pigs in the summer time. I like to have pigs come, as I said, the middle or last of March. I don't like to have spring pigs come later than the first week in April; then the sooner you can get them to be hogs, and onto the market, the better. These pigs ought to weigh before New Years 300 pounds, if well taken care of. We generally try to raise two litters a year from our sows. Maybe some of you think I am crowding them a little, but I keep my sows until they grow old. I generally like to keep a sow until three or four or even five years old, if they do well with their pigs. As a general thing a young sow's pigs don't amount to much, so I just let her take it easy the first year, and only take one litter of pigs from her. I have that sow farrow with her first litter when about a year old. If she is a May pig I let her first litter of pigs come along say when there is good grass; only ask her for that litter, and let her run over until the next spring. A sow that starts out well, and is well handled that raises one litter of pigs and skips until the next spring is a much better milker, if she proves to be any mother at all. Keep these pigs that we have got started in the spring growing. If you have skim milk put in a little shorts with it, and as quick as clover comes put them onto the clover. It isn't a very small job to wean them. Don't let them shrink when weaning. A step backwards is a great pull back. Get a little pig runted when he comes off the sow, and he is not much good. He gets scurvy and rough, and it is hard to get him started again. When a pig goes off the sow, he should go off with his tail curled up his back. When a pig

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is sick his tail will hang off from him, and his nose will go down, and he will lay around and have considerable grunting to do. He is a sick pig, and it is pretty hard to doctor him.

These pigs we are fattening for ten or twelve months old are the most profitable hogs we have. The pigs coming in the fall of the year costs us more, but we have to have two litters; one litter to winter over, because we want some pigs to go onto the market earlier than those you get in the spring; we like to have some to sell in August and the first of September. We start and winter our fall pigs in a kindly way, but not to fatten them. We feed them on wheat shorts and maybe barley ground with it. If you have got a nice stock of clover hay you will be surprised, if you throw them over a few forksful, to see how they will eat it up as clean as sheep will. I suppose those who have a silo are in better shape than I am, but I have a hay cutter and we oftentimes run through a ton or so of clover hay and put it in a good place where it is covered; then throw out two or three bushels on a good feeding place and let them work it over; and they run after the cattle that have been fed grain, and that keeps them growing. They have a good warm place to lie in nights, and cold days we don't allow them out at all. When it comes spring those shoats are put on clover, and we like to feed them a little grain when they are running to clover, and when corn gets in the dough we fence off a piece of corn and hack it down. I know some of my neighbors think that is pretty rough. We tried to cut the corn and draw it to them, but just as sure as we do they don't get half as much as they need. I turn them into the corn and put the spring pigs in with them. They run in this corn field and back into the clover and pick up kernels when these other hogs, older and stronger, wouldn't pay any attention to them. There is nothing left on the ground.

That is one place where we use that spotted corn. (Referring to specimen on the table.) The natural corn of the state of Wisconsin is the Indian Squaw corn. We don't feed all our corn out in that way. I never want to crowd

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a hog, and make him work when he is fattening. I want him to have it pretty easy, especially towards the last. When it comes towards the last of the season he don't care whether he goes out in the field or not. We put him in a pen and commence feeding him for good. We feed with everything that will tempt his appetite, and make him grow right along. We feed two or three weeks in that way, and ship live weight, like every body else. These ten month's pigs, or pigs that come the last of March or the first of April, that have been picking after these old hogs, then come in for our attention, and we turn them into the field of corn, and hustle them along. I have got quite a number now, feeding them this winter. In the winter time we feed the fall pigs barley and rye ground together. We grind it as fine as we can conveniently, so that everything is ground up in pretty good shape, put it in a barrel and turn on hot water, and cover the barrel up tight. We have two or three barrels, according to the number of hogs we are feeding; and we change off. What we scald in the morning we feed at noon, and what we scald at noon we feed at night. What we scald at night goes the next morning. A kerosene barrel full ought to use about a bag and a half of this meal, putting in hot water enough to make the barrel full. That will do for about forty hogs, for their swill; and we feed what corn they will eat. In a very short time these hogs will show you a gain of three pounds a day, if thrifty. When a man gets three pounds a day out of a hog at the price they are now he gets a big price for his feed. When you get them to growing well it don't take very much to feed off forty hogs. We have one pen of hogs that I have noticed what we have been feeding regularly; a bag of this rye and barley ground together and half a bag of wheat shorts made the barrel; that three times a day was all the swill they got, and a bag of corn on the ear each time, which would make about a bag of shelled corn. I have a set of scales in between my corn cribs, where I can drive them through; and certain of the flock know what we want, and when we open the slide they trot out. So we know what we are doing on our feed right along. Except during

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those cold snaps they have been gaining about three pounds a day for quite a length of time.

Well, there isn't much more to say about the hog. After we have got him fat we ship, provided we can ever be satisfied with the price. I suppose if the price of hogs kept going up we would want to hold them indefinitely. Now the way we have been working may not suit you down here. You have a different way of farming. You have a better chance in some ways, because you have more milk in your dairies than we have in Marquette Co., although they are starting there. My farming is what we call a hash. We do a little of almost anything and everything so as to be sure to make a living. We raise some potatoes, hogs and corn; no corn to sell. We raise no barley to sell; we raise no oats to sell. We don't raise any grain to sell. We buy. We have quite a good deal of grain we raise, but we feed it on the place. We have a few cows and steers, and feed those; and sometimes we feed some sheep. We always feed some hogs, and intend to have two or three times of turning off hogs during the year; generally twice, and three times if the market is strong Last, but not least, we raise some horses, and we have some of those to turn off.

DISCUSSION.

Mr. Kingman—Do you breed your own hogs?

Mr. Johnson—Yes; but I buy some sires.

Mr. Kingman—What breed?

Mr. Johnson—Poland China.

Mr. Drake—I would like to inquire whether you have ever been troubled with hog cholera.

Mr. Johnson—Well, they claim it has been in our neighborhood.

Mr. Drake—Did you have it?

Mr. Johnson—The nearest we come to having it was we got scared. We have always made it a rule to feed once a week a mixture of charcoal ashes, a little sulphur, a little salt and a little copperas.

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Mr. Drake—Do you think there is any danger from what is called hog cholera in a flock of hogs well taken care of and clean and nice, and where preventives like those you named are used?

Mr. Johnson—No, I don't think there is.

Mr. Drake—Do you use the same pens and yards year after year right along?

Mr. Johnson—Yes, but we do differently from what some do. When we clean out those pens we *clean* them out, and they are clean.

Mr. Drake—You don't move the pens instead of cleaning out?

Mr. Johnson—No, sir. When we clean them out there is a good deal of dirt goes with them, and we bring in fresh clay to make up for it. I like that top dirt that hogs make in the ground; and when shoveling out corn cobs it is much pleasanter to let the shovel run down into the dirt. Very often when we get through cleaning out the hog pens we we are down four or five inches; and then we draw in red clay, which packs very solid.

Mr. Drake—Don't you suppose it is very deleterious to the healthy hog to be yarded year after year, and housed in the same place without any cleaning?

Mr. Johnson—I don't want my hogs crowded up.

Mr. Drake—Not particularly crowded, but kept year after year in the same yard, and on the same ground, without thorough cleaning?

Mr. Johnson—I should think it would be. The worst thing you can do for any hog is to allow a litter of pigs to come and the sow to lay in horse manure; the little fellows are used up in a short time.

Mr. Martin—And the older ones also.

Mr. Johnson—It hurts all of them, but it hurts the young ones first; that is, shows the quickest.

Mr. Drake—Do you think it necessary for a hog to have some pasture and exercise?

Mr. Johnson—Sure. And the sire above all things, if you keep him for a sire. I have a sire two years old. He earned me $75 this winter, besides my own use. I took care

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of him as you would a horse; that is, he was allowed to serve only one sow in the forenoon, and one in the afternoon, as the extreme. I never allowed anything further than that during the day time. If he had to be crowded at all I waited until late in the evening, and put one in for him during the night. He has been very sure. I haven't had but three sows out of the lot that has come back to me.

Mr. Arnold—What kind of folks have you got for neighbors?

Mr. Johnson—Most of them are white folks.

Mr. Wakem—What are the charges? That is better than keeping a stallion horse.

Mr. Johnson—I charge a dollar a sow. He gives me his money and takes a receipt. If he dont get a litter of pigs he comes back with the receipt, and if I am satisfied he hasn't had a litter, he is entitled to another service.

Mr. Arnold—What are the rest of the fellows around there keeping?

Mr. Johnson—I don't know what you do call it. Patrons come several miles.

Mr. Grisim—I would like to ask the gentleman at about what age he markets his pigs.

Mr. Johnson—I try to market them inside of a year old.

Mr. Grisim—I understand you have them gain three pounds a day. That is 100 pounds a month, isn't it?

Mr. Johnson—I spoke about when we are really crowding them.

Mr. Grisim—I didn't understand.

Mr. Johnson—I don't want you to understand that we commence with the sucking pig at that; but the last few weeks we feed them when they are of the proper size to put meat on.

Mr. Grisim—That is good gaining, a hundred pounds a month. Now, Mr. Chairman, I am going to say a little about the hog business; perhaps not amusing or interesting, but if I get off the track ask me to sit down. I am going to speak from the standpoint where a man hasn't got any mill or any to speak about. I have had experience in

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hogs for sixty-five years. I commenced when I was fifteen years old. My father gave me a pig because it was a little runt. I believe he took me to work with him and the man gave it to him for my day's work. I am quite a hand to pet things and I got that pig up to weigh 306 pounds, and I sold it and bought a colt. I sold the colt and bought some cattle. I aint going onto that subject, but about the hog business. I have had from 1 to 300. That is not on a large scale.

If I was going to make a business of raising pigs I don't want any March pigs; and I don't want any old sows. I will admit an old sow's pigs are larger, and thriftier, a good deal better when they come than a young sow's; but I won't admit they are enough better to pay the expense of keeping her over in the room of a young sow. I have had forty sows with pig at one time, and I won't let a sow raise but five pigs. They were young sows, about 14 months old I think when they had their pigs. I have my pigs come somewhere from the last of July until the middle of August. I had my sows each one by herself, and I wouldn't let her have but five pigs. If she had ten I threw away five. I had 200 pigs with the forty sows. I took care of them myself and kept those sows shut up until the pigs were a month old. Then I turned them into the pasture, and let the pigs run with their mothers until they weaned them. I fed the sows pretty well. They all weaned their pigs when about three months old, I guess. Then I took the sows off and shut them up, and let the pigs run in the barn-yard. I had a shed 24x72 for them to sleep in. I had no floor. That is the time they laid in the ground.

I wintered those pigs in the yard. I was feeding the cattle pretty heavily, and they eat all the cattle didn't digest. I fed them warm swill once a day and then corn twice a day. I didn't lose one. This spring I turned them on to the pasture, an 18 acre field of clover, so that they could go right from the yard into it; and I continued to feed from one to two and three baskets of corn right in the field. I turned them off when they didn't average quite a year, that is 85 of them, and they averaged me 285 pounds

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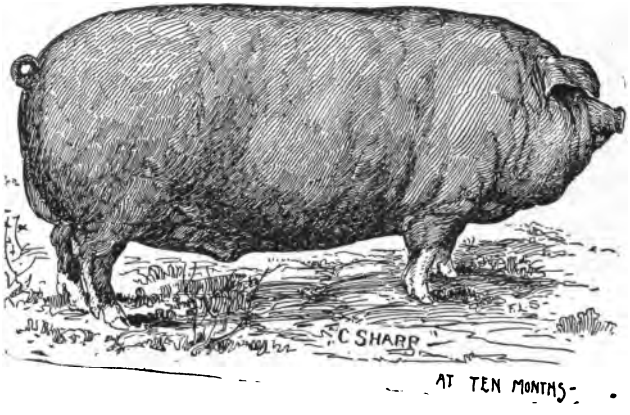
Short-Horn, property of S. K. Webster, Danville, Wis.



Poland China Boar, property of Geo. Wylie, Leeds, Wis.

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apiece. I never carried a swill pail in the summer that I fattened them at all; I had no pens to clean out; they took care of themselves; only just gave them this dry corn in the field. They had this shed to go and sleep in. I sold 85 at $5 85 a hundred. I think if I was going to raise hogs my plan would be to raise them in that way. I have raised 10 from a sow, but doing that they almost eat the sow up; they will take her all but the bones. I think it is cheaper to raise ten pigs from two sows than ten from one. I have had other experience. I had one year 96 that were raised in the same way. I sold them in December. The 96 averaged a little over 400 pounds apiece. Here is a thing I would speak of: These 85 pigs that I sold, they had all run together and all fared alike for anything I know of. One of them weighed 404, and there were pigs in the same lot that didn't weigh quite 200. That shows conclusively you can't take two animals or pigs and feed them the same and have them grow just alike.

The President—I think some of your pigs must have done some stealing from the others.

Mr. Grisim—They had no chance to steal. This corn was thrown right out in the field. The little scamps will steal when three or four weeks old, and almost kill each other. You can talk about the hog, but they are the meanest, miserablest critters on the farm. I have wished ever so many times that when they were driven into the sea they had all stayed there. They will root the underpinning all out from under your barn; and if there is a gateway they will make a mud hold in it. They will eat your geese, chickens and lambs and pull the wool out of your sheep, and do everything mean.

The President—They look better this year than usual.

Mr. Grisim—I haven't got any now at all.

The President—If this discussion is closed we will listen to Prof. Craig on the subject of Sheep Raising.

Prof. Craig—Mr. Chairman, and gentlemen: In presenting this topic to you I shall dwell more especially on the direction in which profit lies in sheep farming. In determining where the profit is in sheep keeping at the present

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time, many views of the matter need to be considered. In considering wool growing I wish to be understood as believing it to be but a secondary consideration. The way that sheep products are quoted at the present time there seems to be a general opinion that the effect in tariff changes will influence the wool market. I am not prepared to even grant that. There has been quite a change going on in the American wool market for some time and that change has been in favor of a different class of wool than that which has been produced in the past. The wool that has been selling up until within four or five years ago has been a fine wool; fine in the sense of the fiber being fine. The wool was short and was mostly produced by Merino sheep. There has been a change, however, of late, and the wool that is selling best now is what we call a medium combing wool, about three inches long. Strength is a merit that precedes fineness. There must be no weak places in the fibre.

The three things that sell wool to-day, as far as I can learn, are strength, length and fineness. The length is the first requirement. You will find wool arranged into three different classes—clothing, delaine and combing. These are graded into fine, medium or coarse, according to the size of the fiber. This medium combing wool, which is required by the present market, can be produced on mutton sheep without detracting from their mutton qualities. When I refer to the production of wool as being a matter of profit to the sheep grower I have in mind the fact that it will likely continue to supply the smaller part of the profit. But it is in another direction that we must look for profit. It is to the production of mutton that we must turn our attention.

In considering this topic from this standpoint it is necessary to make reference to the different kinds of sheep farming. Under favorable circumstances the most profitable line of sheep farming is that of early lamb rearing. I have accurate information to the effect $9 is an average price per head for lambs that are put on the New York market in proper condition in the months of January and

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December. The weight desired is 30 to 40 pounds. But I do not think that the ordinary farmer can under his conditions hope to make much of a success of rearing lambs like these for the Chicago market. As far as I can learn there is but a limited demand for lambs of this kind in Chicago.

The best paying market of the year in Chicago is that which begins about the first of July for lambs that weigh from 60 to 70 pounds. The average price per 100 pounds during 1891 and 1892 as I have estimated it from the sales of 324 lambs kindly given me by Messrs. Clay, Robinson & Co., has been at the rate of $9.36. At no other period of the year do the prices come within $3.00 of this. It certainly seems that where the conditions are favorable to selling the lambs at that time it would be the most profitable period to dispose of them.

In another system of management the lambs are put on the market in the fall. The ewes are the only sheep that are carried over the winter. As a rule it will not be noticed that the prices of the November market are the lowest of the year. I learn from the commission dealers referred to that the average price per 100 lbs. of the sales of 169 lambs has been in 1891 and 1892 as low as $5.79.

In some ways there is considerable profit in feeding the lambs until they are about one year old. This system implies winter feeding. Wethers rightly handled during that time may be made to weigh 140 to 150 lbs. The gain that is made by sheep of the right type can be made at a profit during the course of a year's feeding. To make the most from it requires a lengthy, strong and square framed sheep.

One of the essential requirements in starting into any of these lines is to secure the proper sheep to begin with. For early lamb rearing the Dorset and the Merino are the best. The two methods most generally followed gives the preference to either of these breeds. The one method is to put the ewes and the rams together in July, and then when the lambs are ready for market both the ewes and the lambs are sold. Where that system is followed the Merino seems to be the favorite, because they can be bought cheaply and

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it is not necessary to have as good sheep as though you were keeping them. Where early lamb rearing is made a general businsss the Dorset seems to be in greater favor. It is a most profitable line to follow, but the difficulty is in having the facilities for it and the special market must exist.

When the lambs are marketed in the fall, I think the early maturing down sheep would serve the purpose best. It needs a small, very compact sheep that fattens quickly. In the other class the heavier sheep come in; some of the heavier Downs and even the Cotswolds would answer the purpose better. In all instances there must be a mutton breeding to secure early maturity. Sheep that are descended from stock that is mutton bred take much longer to mature.

Taking up one of those lines, the one most generally adopted, that is carrying the sheep along a year and marketing them in the early spring, say on this month or the next month, there are a few rules in the management that count for a great deal. I do not know as there is anything that will count for more than to have good large sized ewes, well bred and of good mutton born; straight-backed ewes, such as milk well and carry good fleeces so as to keep in good health; not necessarily fine fibred and heavy, but keeping the sheep in good thrift.

There is one thing I should emphasize, and that is trying to keep the flock young. I find some do not consider that matter of much importance. I would try, if building up a flock, to continually take in new lambs, and keep the flock around five years as close as I could. I think about that age you get the best returns from your sheep and do the best all around. They seem to keep in better thrift. In fattening stock for such a market I would startto feeding grain as soon as possible. Try to have them dropped in February or March.

Begin to feed them bran and oil meal. I think those two make as good a feed as you can give lambs. I would force them ahead judiciously. Not too fast, because I believe it is quite easy to over-feed a lamb, and once over-fed it is

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almost as bad as being under-fed. But the common tendency is to practice under-feeding. I would feed them grain right along, and at weaning them try to have some clover aftermath and put them on that. They should get, I think, a little grain with the clover. Then in the fall, when you come to put them in and fatten them, if the lambs were dropped early, I believe it is a good plan to shear them before beginning to fatten them. If dropped in February or March they will have a fairly good fleece by fall, and if you shear them in September or even October they will have enough of a growth of wool to keep them comfortable in the winter. I believe they will fatten better. We have some shorn wethers in our barns now that were shorn in October, and they have got fleeces that are about an inch, or an inch and a half in some cases, long at present. Now the temperature runs down during a cold spell to 10° Fahr. below zero; when it has been that cold they would not mind it much in the shed as other sheep. I do not think you would get much improvement in the weight of wool, but I think the sheep fatten better; when the lambs have dropped early in the spring they have a good fleece by fall.

In beginning to fatten sheep the plan that I have followed is to start them first on oats, then introduce corn, and finish them on oil meal. They start perhaps on a pound of oats and when we come to finish them they are eating two or three pounds of mixed grain. The best fodder with that would be good clover hay, and in addition, some roots. Feeding in that way and keeping the sheep quiet they make good gains, and I think I am safe in saying that sheep of mutton breeding fattened in that way will average 140 to 150 pounds. I think we have learned through the past season that the quieter the fattening sheep are kept, and in fact the more confined they are kept, the better they do. I do not think it is necessary to say any more, but I will gladly try to answer any questions you may wish to ask.

Mr. Martin—Don't you find a year old sheep the poorest sheep there is to feed?

Professor Craig—Take a year old sheep, whether they

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will fatten well or not depends a great deal on their previous management. Some breeds, take the Cotswold, where they have been fed well and taken good care of up to a year old, I believe you would fatten them beyond that period with considerable profit. It depends something on the style of sheep, but as a rule I am satisfied that it would not pay to carry sheep over to the second year and fatten them then. In buying sheep I prefer to buy lambs to fatten.

Mr. Martin—Would you buy yearlings, if buying sheep to feed?

Professor Craig—I would much rather have lambs than yearlings.

Mr. Arnold—Why?

Prof. Craig—They fatten quicker. On account of teeth troubles the older sheep do not feed as well. Sheep do not get a full mouth until between 4 and 5 years old. I much prefer to fatten lambs. I think they make a greater gain, and cost less to maintain, than the older sheep.

Mr. Drake—When would you castrate the lambs?

Prof. Craig—I would prefer when between three and four weeks old. Some prefer to do it earlier. I have found that when a lamb is castrated early he does not develope in front the same as a lamb that you allow to go three weeks. I find there is no danger in castrating then if kept in a dry place, and they seem to develop better in front.

Mr. Youmans—What would you feed the breeding ewes in the winter time?

Prof. Craig—Beginning in the fall, if the sheep are not in good condition, I would feed them a little grain. I make the condition of the sheep the guide as to whether they should be fed grain or not. I start to feed oats. Sometimes it requires as much as a pound per day to get them in good condition. For fodder, to get them on in the winter, I prefer clover hay. You can feed corn fodder, too, and the sheep will do well. If suckling lambs I like to feed silage. They seem to like it and do well upon it. They also like

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roots. I do not know as there is much difference between silage and roots for breeding ewes.

Mr. Youmans—Have you had any experience in feeding wheat screenings?

Prof. Craig—No, I have not.

Mr. Martin—I have been in the habit of feeding sheep more than breeding, although I have done some of that. I have fed as high as 1,500 at a time, for fattening purposes entirely; buy in the fall. Of course we get mixed flocks. We can't take our pick. We buy flocks that men want to close out; lambs, yearlings, two-year-olds and five year-olds. Now the year old is the poorest sheep I ever fed.

Mr. Arnold—Why?

Mr. Martin—Because they can't digest; can't chew and grind their feed.

Mr. Arnold—Why?

Mr. Martin—Because their teeth are like yours; some of them long and some short.

Mr. Brown—Do you pretend to say that is the case with the grinders of the sheep?

Mr. Martin—Yes, I do. I am not talking bosh. I am talking something that I know about. I have made it a business for a term of years to buy from one to three and five hundred, and one winter fifteen hundred to feed for the market. I have fed 1,500 sheep on screenings and nothing else.

Mr. Grisim—Did you give them any hay?

Mr. Martin—Not a spear.

Mr. Youmans—What is the result?

Mr. Martin—I shipped as nice a lot of sheep on the Chicago market three years ago as was put on there that season. The Minnesota sheep feeders are feeding thousands in St. Paul on wheat screenings, and nothing else, not even oat straw; and they are putting as fine a lot of sheep on the market as goes anywhere. The majority of the sheep put on the Chicago market are fed in this way. The Montana sheep are shipped in and fed by the thousands on screenings alone. The old sheep this gentleman speaks of, out of a lot of three or four hundred I would pick out a dozen. I

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put them in a place by themselves. They will fatten as fast as the rest, but they have got to have plenty of feed, and time to take care of it.

The President—When do you castrate your lambs?

Mr. Martin—Not at all, sell ram lambs as such.

The President—I think the audience would be very glad to hear from Mr. Wallace, who is present here from the state of Iowa, representative of "The Homestead." Mr. Wallace, will you give us a little talk here?

Mr. Wallace—Gentlemen: It affords me very great pleasure to meet with this agricultural association; and for once in my life, and I think about for the first time in my life, I have been a little ashamed of the state of Iowa. There has never been a meeting of the agricultural society of Iowa that in any manner approaches the meeting that you have had here today. Not that Iowa is lacking in agricultural interest, but because the life of Iowa agriculture is not in the Agricultural Society, but in the Improved Stock Breeders Association. Of course, gentlemen, you will not expect me to say anything on the lines of dairying, because we all admit that in dairy matters Wisconsin stands up first. Don't expect me to say anything about your "special purpose cow," which is *the* thing for you, and will become the thing bye and bye over a good deal more country than it is now. I am not here really to make you very much of a speech on any subject, simply to extent my hearty good will and congratulations, and wish you all manner of prosperity.

If there was anything I would talk about, it is what is a little hobby of mine, and that is "clover." I don't want to start to talk about it to-night, because I think I could raise such a storm here, not a storm in the sense of destructive storm, but in the line of question, answer and discussion, that we wouldn't get away until midnight. In looking over the reports of your meetings, I find you don't discuss the clover question very often directly; but I find that there is scarcely a topic that can come up in which there isn't some man that introduces that clover question. You have it here tonight.

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It was shut off, or you wouldn't get home until midnight. Now I don't want to undertake to discuss such a great, big question. I am really almost tired of discussing it, and I have written all I know about it in a little book. I am not here, however, to advertize. But there is just this one thing I will say: If you expect to keep up the fertility of your soils you must use clover. If you want to run them down so thoroughly and completely that they wont be worth living on you can do it by raising clover.

It will not do for you gentlemen to expect that because clover through the microbes in the tubules on the roots will draw on the winds of heaven for nitrogen worth 18 cents a pound, that you can keep on indefinitely. Clover makes large demands on the phosphoric acid and lime of your soils. If you conclude you can grow your crop of clover and sell the product off the farm, the last stage of that farm will be worse than the first. Now, gentlemen, in the west we must settle down to a system of farming that will be permanent. I suppose the soil robber has done his work in your state as he has done and is doing in ours, and doing in Kansas and Nebraska; selling his land by piecemeal, and then going west to find new farms to rob, and new worlds to conquer. One of the greatest blessings that ever happened to agriculture is that the limit to tillable lands has been reached, and the soil robber has no further place to go. He must either quit farming or learn to farm.

As I understand it a permanent system of farming requires stock growing in some form. What that form shall be depends upon the country. With you it is dairying; in some places sheep growing. With us it is cattle raising and hog growing, wool growing and dairying, all combined. But that diversified system of farming must provide for returning back to the soil, in the shape of barn yard manure, everything you take from it; liquid and solid. When you adopt that system there is scarcely a limit that can be set to the possible fertility of your soils. Nature always works with the good farmer, and the good farmer always works with nature; and these inorganic elements of

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our soils, which the soil robber takes away from it, are accumulated slowly through the ages by the disintegration of the rock which forms the soil in the beginning. By drawing on the heavens through the ligumes for your nitrogen, and preserving these organic elements and putting them back on your farm, you are performing a religious duty.

We have three stages of development in the western country. The primitive stage, where men simply hold down a piece of land; the homesteader's stage, where we don't plant a tree; he builds no more than he can help. His cattle gather their feed as the wild indian does, or as the wild buffalo does its. As soon as population becomes too dense, and neighbors too plenty, he moves west and the soil robber follows. He follows like the thief you read about in the scripture, that comes in the sheep fold, to destroy and waste. When he is done, then comes in the farmer. That is the history of the country. I remember when I was a boy in Pennsylvania hearing my father tell about a farm he had bought of a man who couldn't make a living on it; he had robbed it of its fertility. It had to be built up. And to-day, after 50 years cultivation, that farm is better than it ever was before.

And so when we come to this third stage, when the farmers get out of the wilderness, do away with their tabernacle wanderings and build their temple and set up their home, then comes in the permanent and final condition of agriculture in the west; and I want to say to you gentlemen that in my judgment, as far as I can see from looking over the whole field, the western farmer has a position that is the envy of the world. There is a habit that people have, that merchants and manufacturers have, of looking down upon the farmer, and calling him in contempt "the granger," as a man who has none of the delights of life, no society, no comfort and no pleasure.

Gentlemen, there is no set of men in the United States that can have more of the solid comforts of life; more of the intellectual wine of life; and that will be better read

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men, more level headed men, and better thinking men, than the farmers of the west who farm their lands in the way God intended they should be farmed; raise what he intended they should raise; raise what is adapted to their locality, and then dignify their profession and honor their business; talk it up instead of talking it down; defend their rights at the polls and everywhere; educate their children in the science of agriculture and the fear of God, there is no happier position in this world that I know of than the position of the independent, industrious, intelligent God-fearing western farmer.

Mr. Arnold—I feel like congratulating the farmers of this state in the growth that we have made in this regard. I have been in the habit of attending these conventions and have been a member of this society for a great many years. I remember very well in the early stages of this society, how we would meet here in this room, a little handful, and you could hardly get men upon their feet to talk. Whenever they did say anything it was something berating our vocation, or complaining of our condition, or finding fault with monopolies of all characters. We felt that we were the outcasts of the earth; that we were not appreciated. Today we stand here the peers of any profession; and we believe it, and we know it, and we show it by our conversation and our demeanor, whether among ourselves or among other people. We feel that our wives are the equals of anybody's wives; and we know that we are judged not by our profession, but by what we really are, as all men should be judged. This being the condition today I think we may congratulate ourselves, gentlemen, that the Wisconsin State Agricultural Society, the Grange, and the Farmers Institutes have been in our midst, and that we are as we are.

The President—Gentlemen of the convention, and members of the society: I think we have just concluded a very pleasant meeting. The sessions of the convention have been well attended, and I think the discussions have been profitable and will prove useful to you in the future. I hope

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you will go to your homes bearing some fruitful lessons. During the year, in your experience upon the farm, and in business and elsewhere, new and original thoughts and ideas will occur to you, and next year bring them here; give them to your friends and associates.

We need a little stirring up in this particular. We want something new. I thank you all for the very cordial treatment you have given the chair, and declare this meeting closed *sine die.*

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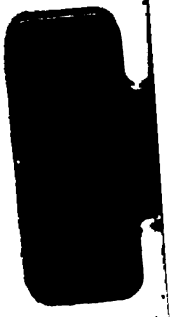

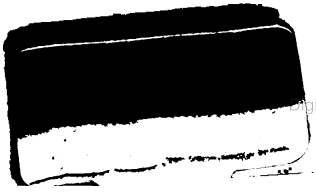

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